**Assessment Template Sheet**

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 **AIU PROJECT ASSIGNMENT**

**Phase-2 Course (CRITICAL THINKING IN SPORTS DOMAIN)**

*Impact on Athletes and Coaches*

**Brief**

***This essay assignment focuses on a detailed analysis of critical thinking*** as an important human characteristic with its application of very much importance in sports domain.There are ten points which are selected as per Phase-II Critical thinking lessons as available in AIU student portal and to be critically analyzed in the assignment.

**Description of Brief requirements**

These ten points are explained in context of its application in sports domain by elaborating the need of critical thinking skills by both sportspersons/athletes and coaches. The main point is Critical Thinking skills and its interrelationship is described with sports domain. ***The 1st point******Bases and Ex****p****onents is like an introductory description of the topic followed by 2nd point mentioned as What Is Critical Thinking? That in simple words explains the meaning of critical thinking in reference to various literature materials. The 3rd point focuses on* *Thinking Skills in Education and Life* followed by *Complex Thinking* description in 4th point. From the 5th point the main area is touched which is *Defining Critical Thinking in context of Sports domain*** and it is followed by ***Six Thinking Hats*** application for critical thinking in 6th point. The necessity and factors responsible for ***Creative Training & Development*** is presented in 7th point. The hindrances to critical thinking due to display of ***Immature behavior*** by individuals is described in 8th point followed by the role of ***Metacognition*** in strengthening of critical thinking skills in 9th point. In the last point ***General review of Critical thinking skills*** is provided by describing its need and ways of attainment in sports domain for the betterment of both athletes and coaches behavioral traits.

**Summary**

From all the information and facts to be obtained in ten points based on Critical thinking application in context of sports domain it is seen that the development of critical thinking skill is not like memorizing and athletes often face the challenge pertaining to repetition of the same behavior in a difficult situation thus justifying the need of strengthening of mental capacity to think about the process and not just remain focused on cause-effect based conclusion. It is observed in team based games that either performance criteria is lacking or players not able to understand the expectation of the coach which can be considered to be a sign of poor critical thinking capacity. The players need to be well aware of the performance criteria and critically study it for the promotion of self-assessment and evaluation of the outcome of the decision taken by him/her in the field.

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# ****1.0 Introduction****

Life is all about struggle that includes overcoming the hurdles, obstructions to come out successful and it all depends on a decision taken at the right moment of time by an individual. The success of decision taken depends on the process followed for the same and in that regard the critical thinking quality of an individual plays a very vital part. The concept of critical thinking is used to describe an intellectually disciplined process by which a person is able to tactfully handle pressure situation by observing, experiencing, reasoning and synthesizing solutions on own to come out of stressful situations. The act of critical thinking can also be termed to be a guide for a person to act accordingly as per set of belief and take steps as deemed suitable based on conditional circumstances (Becirovic, Hodzic & Celjo, 2019). The quality of critical thinking is not just only a quality but a necessity for people associated with the sports domain because international sportsperson and coaches are to keep performing at highest level, making them face tremendous pressure and stressful situation. Good and organized thinking skills in a critical manner helps in improvement of athletes performance, quick decision making capability and preventing succumbing under pressure situation.

# 2.0 Discussion

## ****2.1 Bases and Ex****p****onents****

In the beginning of the discussion it is important to mention over here that critical thinking is a disciplined process of making use of intellectual capacity for active and skillful conceptualizing of strategies for resolution of the problems (Elder & Paul, 2020). The critical thinking capacity of a person is the display of characteristic by a person to examine existing structures, analyzing differences among opinions and after studying of alternative viewpoints taking the decision for solving a problem accordingly. Kuhn (2019), describes the process of critical thinking to be like an interwoven mode of thinking process that includes all the domains of science based, mathematical, anthropological, economic and lastly philosophical thinking. There are two components of critical thinking which are information and intellectual commitment that enables a person to critically think, analyze, interpret and implement a decision. Mere use of information without skill or applying skill without correct details of a process is not the key to arrive at a fruitful decision by an individual critically thinking about taking a decision.

The main hindrances to critical thinking are the tendencies of people to be biased, rely on distorted, partially correct or incorrect facts that serves no good in decision making process but deteriorating the overall thought process. The prevalence of shoddy thinking quality within a person is not good and needs to be replaced by critical thinking capacity which is something that is gained by practice or systematically cultivated. Caceres, Nussbaum & Ortiz (2020), say that critical thinking actually calls for an overall persistent effort for examining evidences, situations and conditions based on which decision is taken for an amicable conclusion. The quality of a critical thinker is to properly recognize a problem, get hold of workable means for solving the issues making use of gathered pertinent information and to ensure the considered assumptions turn valuable in addressing the problem.

## ****2.2 What Is Critical Thinking?****

It is valid and justified to say that critical thinking is having a very significant role of importance in the sports domain because it helps the players and athletes to properly analyze any critical situation and restructure the overall thinking process in such a manner to add to taken decision’s effectiveness (Supriyatno, Susilawati & Ahdi, 2020). The art of critical thinking is of equal importance for the managers and coaches as well because they are able to strategize a plan remaining well aware of the risk factors, getting rid of incorrect beliefs and implement a strategy with confidence. According to the views of Richards, Hayes & Schwartzstein (2020), practical critical thinking is considered to be a long term implicit goal for the coaches and teachers for proper transferring of the critical thinking skills among their students or learners getting training under them. Critical thinking skills help in development of character of the athletes and sportsperson turning them into cautious interpreters for their behavioral approach for proper handling of any pressure situation (Chambers, 2018). The sports coaches need to understand the fact that there is a need for accurate appraisal of the behavioral approach because the learners are to be made aware of the fact about the vulnerability of their interpretation of a situation properly to avoid any kind of error. For the development of critical thinking skills, the coaches are to encourage the practice to keep themselves calm in a tough or challenging situation by providing them with ambiguous behavioral samples that helps in accurate description and a crucial step for behavioral interpretation.

The coaches also have a vital role to play in development of theoretical critical thinking among the athletes by providing them with a proper scientific explanation for their behavior in a specific situation making them skilled enough for application of the learnt theories of psychological concepts in practical domain in an appropriate manner as stated by Pol et al. (2020).

It is important for the teachers to properly introduce the psychology of critical thinking as an open minded concept to encourage criticality instead of passivity which constitutes to be one of the most vital and elegant act of critical thinking. McCosker et al. (2021), states that the coaches need to be train the learners in such a manner so that as per conditional aspects, they are able to develop new ideas with proper discarding of the old conceptions without any difficulties. According to the views of Kudesia (2019), the ability to critically think is not something that usually comes from practice but it is more like that of a spontaneous reaction. There is nothing wrong in individuals who have a questioning attitude before taking a decision or agreeing to the decision taken by his/her immediate senior and cannot be considered to be display of dishonor, rude behavior or stupidity but a display of mind sharpness prior to taking a decision on which critical stage of events depends. Good critical thinking ability enhances the risk taking capacity of the people by remaining well prepared for any eventuality but at least take a positive step for getting the work done.

## ****2.3 Thinking Skills in Education and Life****

According to the views of Ciampolini et al. (2019), the main intention of the coaches and educators need to be such that they are able to develop a proper behavioral characteristic among the learners to think critically as well as develop creative thinking quality to take decision about solving of any type of complex situation. There are different types of thinking skills which constitute to be an important part of education as well as life’s problem solving skills. There are two types of thinking processes categorized as creative as well as critical thinking, with the former is based on generation of the innovative ideas and the latter pertaining to evaluation of the ideas for its applicability about solving of the problematic situation.

 The critical thinking is considered to be one of the essential educational as well as life skill in the 21st century because the individuals from their early learning days need to be able enough to handle pressure situations, think critically for the obtainment of a solution by the application of out of the box solutions as stated by Rahman (2017). The importance of critical thinking in education and life is stated over here in two forms i.e. achieving something positive and getting rid of the negative qualities. The critical thinking skills in an individual help in moving away from the tendency of mystification reducing the probability of coming to rash conclusions which often leads to choking under pressure and problem remaining unresolved (Wrahatnolo, 2018). The critical thinking skill is good for removing the quality of reluctance to question and to blindly follow the orders of authority which should not be the case as this increases the level of intellectual discipline of individuals. Good thinking skills prove to be helpful in life of an individual because it facilitates clear expression of the ideas in a conscious manner. Critical thinking develops the quality in an individual to personally accept the responsibility of either a good or bad decision without blaming own thinking for the latter case but trying to better from the gaining of a learning experience.

The critical thinking skills play a crucial role in tackling of the complex situations in life by evaluation of the available information, making use of it for evaluating the overall thought process and comprehensive assessment of the facts helping in the process of segregating of the false ideologies (Drake & Reid, 2018). Efforts are made by the teachers and coaches to make use of critical thinking model for removing any type of intuitive thinking and making use of it for inculcation of the same quality among their students as a part of their improved teaching strategy.

## ****2.4 Complex Thinking****

 De Melo (2020) mentions about a completely separate set of mental ability in the form of Complex Thinking that facilitates the proper understanding of complicated problems to solve it properly and get a logical solution for it within the quickest span of time. The importance of complex thinking is relevant in today’s practical world because it is a type of ability to draw inferences from limited information, understand the source of the problem or concern and solve it within the quickest span of time. Erisen et al. (2021), states that a person cannot be stated to be good or bad in terms of complex thinking ability because different people usually come up with different kind of ideas and interestingly the most imaginative or creative person is able to solve the problem based on his/her complex thinking ability.

## ****2.5 Defining Critical Thinking in context of Sports domain****

Ronkainen et al. (2021), states that critical thinking capacity of coaches is having its own set of importance not just only for training of the athletes but to understand and evaluate their capacity to win and also to develop a tendency among them for accepting loss with grace. The responsibility of coaches is not just only to develop a sense of critical thinking among the athletes but to develop their self ability to critically think as well so that they can motivate the athletes and players to independently think and decide properly in complex situations. The sports domain is having similarity with life, with ups and downs being a part of it and it is the responsibility of coaches of team sports to critically think and prepare a strategy accordingly so as to get a positive result by keeping prepared for the worst.

In individual or team sports, it is often seen that under pressure situation the athletes or players are prone to succumbing and their performance downfalls, proper handling of which or effective mitigation can be done by an efficient sports coach having the capacity to critically think and take proper decisions (Hulme et al., 2019). The coaches need to have a proper understanding of the capacity of the players of a team managed by him/her or an individual athlete trained by him/her so as to critically analyze the situation and arrive at a firm decision for effective solving of the problematic situation.

The good effects of having the ability to critically think under complex situations within an ongoing play or sport is very important for a player and this can be termed to be more like a cognitive activity for taking quick decision within a very short span of time. Kim et al. (2019), says that good critical thinking capacity among athletes proves beneficial for effective handling of stressful situation which are quite common in international standards competition and it is equally essential for the coaches/team managers as well.

The coaches who are able to critically analyze a situation and guide their main players to implement a strategy display the strong characteristic feature of having the mental strength to take purposeful judgment in an effective manner. The need to control and self regulate as per conditional demand is also an outcome of good critical thinking capacity that needs to be displayed by both an athlete and a sports coach. Whitley, Massey & Wilkison (2018), states that the individuals who are able to critically think are sensible in nature, comparatively calm, not panicking and displaying no such signs of skill breakdown under pressure thus able to tackle tough situations with relative ease. The skill of critical thinking is considered to be like that of a reasonable process to a great extent reflective in nature for the people associated with team sports for taking a decision which can either turn the game or event in team’s favor or against it. An important point over here is that in team games like football and cricket, the coach has a very vital role to play in preparing a plan or strategy that requires critical thinking. As per the views of Potrac, Nichol & Hall (2019), the coach needs to prepare the plan in a tactful manner, interpret the playing condition, opponents strengths and weakness based on which he/she is to brief the players for applying the strategy. All these activities require proper critical thinking ability of an individual to interpret the situation, having justification for the strategized plan and be prepared to provide with provide proper explanations in case it fails to generate the expected outcome on the pitch. The ability to critically think is not something that is present in individuals from a very tender age but is a quality that needs to be developed (Clark et al., 2019). The sportspersons or coaches who are able to critically analyze a situation usually show high self confidence level in taking any firm decision without breaking down in case of situational loss. Self control is very much needed within any athlete specially participating in individual sport and it can be only attained by a person who is having the tendency to critically think and resolve the problematic situation.

## ****2.6 Six Thinking Hats****

The technique of Six Thinking Hat by famous Maltese psychologist named Edward de Bono and it is considered to be a beneficial tool for looking and critically analyzing a particular problem from six different ways or perspectives (Gill-Simmen, 2020). The advantage of making use of this technique as a part of Critical Thinking is to look beyond instinctive positions and categorically explore different perspectives to arrive at an amicable solution without arguing about what is right or wrong.

The Blue Hat is termed as *the Conductor’s Hat*, which defines the overall controlling of thinking in doing of proper decision making on the basis of an agenda, summarizing the points and quickly obtaining conclusions. The Green Hat which is also called as *the Creative Hat,* is actually depicting the quality of creative thinking that leads to exploring a varied range of ideas to not keep stuck in a situation and proceed forward by making use whatever possible ways available (Gocmen & Coskun, 2019). Red Hat is known as *the Hat for Heart,* that is representing the basic instincts in case of engaging in a critical situation where any decision taken has to have a logical justification for the same. The other name of Yellow Hat is *the Optimist’s Hat,* is to have an overall optimistic approach to solving of any complicated problem and value addition from the taken decision (Gocmen & Coskun, 2019). The Black Hat which is the most overused hat is also called as *the Judge’s Hat,* is about applying critical judgment skills to assess risks and remain cautious about any kind of troublesome situation. The last one is the White Hat that is based *on Information gathering,* is meant for proper collection of relevant information and correct insights to face a problem and solve it by critical thinking.

## ****2.7 Creative Training & Development****

According to the views of Wechsler et al. (2021), the people who are able to critical think are mostly disciplined thinkers because they are applying theoretical concepts to clear the doubts from their mind and without over thinking much apply the solution for proper addressing of the problematic issue. The most important criteria to creative thinking is to primarily focus on the significance of the thinking and its output application for solving of the problems by the application of innovative steps. For any coach or teacher it is very important to stick to the point of concern among any player or trainee, adding to its relevancy and interact with him/her prior to starting of the creative training process (Wechsler et al., 2021). For any player or even a person it is essential to develop a habit of questioning the person followed by self-questioning to think deeply about the feasibility of the process to be selected or decision to be made which can be later termed to be a creative depending on situational aspects. The coach or teacher needs to be aware of the fact that whether the trainee or the sportsperson is having a very vague thinking prior to decision making because formless and blurred thinking is the main obstruction to creative thinking development process.

One of the most important criteria for developing the characteristic of creative thinking is to get rid of any types of deceptive or misleading thinking factors by properly clarifying the need of the decision, summarizing its application process and implementing it, with having a proper justification of the same. The coaches need to train the athletes to strengthen their creative thinking skills by giving them with examples to develop a strong interrelationship of their thought process with the life experiences. The key to successful creative thinking is to train the players to indulge in any kind of fragmented thinking practice so as to establish to come with logical solutions for proper solving of the problems (Numonjonov, 2017). There is need to come up with more than one solution for any complex problem which is the outcome of creative thinking and post critical analysis the most viable option is selected based on critical thinkers’ intellectual discipline quality. Post proper training of creative thinking capacity the decision making capacity of an individual changes, sounds more reasonable and rational in approach thus decreasing the chances of any failures.

## ****2.8 Immature Behaviors****

The quality of critical thinking is quite difficult to get in such persons who are quite immature and lack the tendency to show minimum maturity while taking or arriving at a decision of critical importance as stated by (Indrasiene et al., 2019). In the sports domain, the coaches find it extremely difficult and challenging to deal with such people who tend to show these types of characteristics because in any crucial situation the main point is to resolve the problem and not contend with an immature person, because it just only delays the implementation process of plan but also reduces its success rate. According to the views of Berryessa (2018), the term immaturity should not be used to denote a person in a very casual or customary sense but based on the reactions shown by that particular person or individual while handling of a crisis where his/her intellectual decision making capacity was required to be properly applied. The ability to critically think is the quality of a highly matured person because a self centered, not able to think for self, not following instructions and lack of involvement tendency depicting person can be very well termed to be highly immature (Umrzokova & Pardaeva, 2020). In sports environment, immaturity impacts both the sportsperson as well as the coach because in both individual and team games a coordinated approach is required that facilitates the proper handling of complex situation, which can get hampered due to display of immaturity from either of them. A sportsperson or player shying away from his/her coach and showing reluctancy to follow instructions is a sign of immaturity and vice versa which are not good for critical thinking quality development.

## 2.9 Metacognition

 Kozikoglu (2019), describes metacognition as the cognition about cognition which is simple words can be elaborated as the quality of knowing the knowing because its origin is from the word “Meta”, that means beyond. Metacognition can take place in many forms and it is inclusive of the knowledge level of a person about having the awareness of a particular strategy or strategies from which the appropriate or most suitable one is to be selected for the purpose of proper problem solving. The process of Metacognition is further divided into two parts namely cognition knowledge and the tactics for cognition regulation. An important form of metacognition is metamemory which is described to proper knowing of memory and mnemonic techniques for grasping a proper idea about the differences in metacognitive processing on a cross cultural basis, important aspect of consideration for among trainers and learners.

The use of metacognitive practices are recommended by the sports coaches for gathering awareness about the strengths and weaknesses of the players, and proper recognizing of the limit of a person’s learning capacity or knowledge ability (Mohseni, Seifoori & Ahangari, 2019). This is of great help for the coaches to actively monitor the effectiveness of learning strategies and its application for improving of the performance standard. The lack of metacognitive behavioral approach is having direct relation with people being unaware of the in competencies and also the deficiencies in intellectual skills that need to be addressed for proper development of critical thinking ability. Arslan (2018), states that the process of critical thinking actually involves proper awareness of the thinking mode to be taking place within a domain. This is of great importance especially for the sports coaches because metacognition actually involves a proper understanding of the efficacy standards of the strategies and its success rate for a particular athlete prior to participating in the event or playing the game in the pitch.

## 2.10 General review of Critical thinking skills

From the discussion till now and in reference to the views of Becirovic, Hodzic & Celjo (2019), it can be stated that critical thinking actually involves making use of a special group of the interconnected skills for proper analysis, creative integration and evaluation of facts from the findings that are regularly read and heard. An important quality of a critical thinker is to have the ability for deciding on particular set of ideas, find its interconnection, trying for creative integration of the thought ideas and evaluating the effectiveness of solution based on which practical recommendations are to be done (Kuhn, 2019). For a person to develop his/her critical thinking ability, it is necessary to have a proper knowledge about all other associated skills that can properly build upon each other.

It is important and at the same time necessary for the people trying to develop the quality of critical thinking to have basic reasoning qualities on the basis of which ideas are thought, its effectiveness analysed, comparative analysis of own and other’s perspective and implementing it accordingly for which proper justifications are necessary. In simpler terms, it can be stated that the deliberate determination of the decision’s acceptability or its rejection which enables the person to act in a particular manner are considered to be the aftereffect of good critical thinking skills (Chambers, 2018). A person who is able to critically think in a situation tends to show characteristic traits of being rational and only takes decisions for which there are certain justifications for it and recommending changes for acting in a certain manner with the sole intention to get the problem solved in the quickest span of time. Some of the basic characteristics as stated by McCosker et al. (2021), of critical thinkers in general are their curiosity about world, asking creative questions, tend to collect information from credible sources, open minded in trying out all alternatives to find out the best and feasible solution for solving the problem. The creative thinking capacity has proved to be useful for people belonging to sports domain because it improves complex problem solving capacity with added precision in an orderly manner even in such instances when the evidences are highly insufficient and decision is required to be taken instantly.

# 3.0 Conclusion

In this essay detailed analysis of the concepts related to Critical Thinking is done that includes focusing on the points of **Critical Thinking, its interrelationship with Complex Thinking, the usefulness of Six Thinking Hats for critical thinking and the need of thinking skills for developing of creative skills to effectively tackle complex situations. The main alignment of the critical thinking aspect is done in accordance to its application and necessity for the people in sports domain i.e. both coaches and athletes/sportsperson perspectives. The characteristic feature of Metacognition and its importance for a person to develop his/her critical thinking skills are highlighted along with describing the need for overcoming of immature behavioral traits that hinders critical thinking capacity. In the end of discussion, a** general review of critical thinking skills are provided in context of its application for sports domain and for adding to the effectiveness of decision making process in pressure situations.

# References

Arslan, S. (2018). Investigating predictive role of critical thinking on metacognition with structural equation modeling. *MOJES: Malaysian Online Journal of Educational Sciences*, *3*(2), 1-10.

Becirovic, S., Hodzic, F., & Celjo, A. B. (2019). Critical thinking development in the milieu of high school education. *European Journal of Contemporary Education*, *8*(3).

Berryessa, C. M. (2018). Potential Impact of Research on Adolescent Development on Juvenile Judge Decision‐making. *Juvenile and Family Court Journal*, *69*(3), 19-38.

Caceres, M., Nussbaum, M., & Ortiz, J. (2020). Integrating critical thinking into the classroom: A teacher’s perspective. *Thinking Skills and Creativity*, *37*, 100674.

Chambers, F. C. (Ed.). (2018). *Learning to mentor in sports coaching: A design thinking approach*. Routledge.

Ciampolini, V., Milistetd, M., Rynne, S. B., Brasil, V. Z., & do Nascimento, J. V. (2019). Research review on coaches' perceptions regarding the teaching strategies experienced in coach education programs. *International journal of sports science & coaching*, *14*(2), 216-228.

Clark, L., Pantidi, N., Cooney, O., Doyle, P., Garaialde, D., Edwards, J., ... & Cowan, B. R. (2019, May). What makes a good conversation? Challenges in designing truly conversational agents. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (pp. 1-12).

De Melo, A. T. (2020). *Performing Complexity: Building Foundations for the Practice of Complex Thinking*. Springer Nature.

Drake, S. M., & Reid, J. L. (2018). Integrated curriculum as an effective way to teach 21st century capabilities. *Asia Pacific Journal of Educational Research*, *1*(1), 31-50.

Elder, L., & Paul, R. (2020). *Critical thinking: Learn the tools the best thinkers use*. Foundation for Critical Thinking.

Erisen, C., Redlawsk, D. P., & Erisen, E. (2018). Complex thinking as a result of incongruent information exposure. *American Politics Research*, *46*(2), 217-245.

Gill-Simmen, L. (2020). Developing critical thinking skills: Using Edward de Bono’s six thinking hats in formative peer assessment & feedback. *Journal of Applied Learning and Teaching*, *3*(1), 138-141.

Gocmen, Ö., & Coskun, H. (2019). The effects of the six thinking hats and speed on creativity in brainstorming. *Thinking Skills and Creativity*, *31*, 284-295.

Hulme, A., Thompson, J., Plant, K. L., Read, G. J., Mclean, S., Clacy, A., & Salmon, P. M. (2019). Applying systems ergonomics methods in sport: a systematic review. *Applied ergonomics*, *80*, 214-225.

Indrasiene, V., Jegeleviciene, V., Merfeldaitė, O., Penkauskiene, D., Pivoriene, J., Railiene, A., ... & Valaviciene, N. (2019). WHAT CRITICAL THINKING AND FOR WHAT?. *Social welfare: interdisciplinary approach*, *1*(9), 24-38.

Kim, M., Kim, A. C. H., Newman, J. I., Ferris, G. R., & Perrewé, P. L. (2019). The antecedents and consequences of positive organizational behavior: The role of psychological capital for promoting employee well-being in sport organizations. *Sport Management Review*, *22*(1), 108-125.

Kozikoglu, I. (2019). Investigating Critical Thinking in Prospective Teachers: Metacognitive Skills, Problem Solving Skills and Academic Self-Efficacy. *Journal of Social Studies Education Research*, *10*(2), 111-130.

Kudesia, R. S. (2019). Mindfulness as metacognitive practice. *Academy of Management Review*, *44*(2), 405-423.

Kuhn, D. (2019). Critical thinking as discourse. *Human Development*, *62*(3), 146-164.

McCosker, C., Renshaw, I., Russell, S., Polman, R., & Davids, K. (2021). The role of elite coaches’ expertise in identifying key constraints on long jump performance: how practice task designs can enhance athlete self-regulation in competition. *Qualitative Research in Sport, Exercise and Health*, *13*(2), 283-299.

Mohseni, F., Seifoori, Z., & Ahangari, S. (2020). The impact of metacognitive strategy training and critical thinking awareness-raising on reading comprehension. *Cogent education*, *7*(1), 1720946.

Numonjonov, S. D. (2020). Innovative methods of professional training. *ISJ Theoretical & Applied Science*, *1*(81), 747-750.

Pol, R., Balagué, N., Ric, A., Torrents, C., Kiely, J., & Hristovski, R. (2020). Training or synergizing? Complex systems principles change the understanding of sport processes. *Sports Medicine-Open*, *6*(1), 1-13.

Potrac, P., Nichol, A. J., & Hall, E. T. (2019). Critically understanding and engaging with the (micro) political dimensions of coaches’ work in an advanced undergraduate coaching course. In *Coach Education and Development in Sport* (pp. 45-57). Routledge.

Rahman, M. (2019). 21st century skill'problem solving': Defining the concept. *Rahman, MM (2019). 21st Century Skill “Problem Solving”: Defining the Concept. Asian Journal of Interdisciplinary Research*, *2*(1), 64-74.

Richards, J. B., Hayes, M. M., & Schwartzstein, R. M. (2020). Teaching clinical reasoning and critical thinking: from cognitive theory to practical application. *Chest*, *158*(4), 1617-1628.

Ronkainen, N. J., Aggerholm, K., Ryba, T. V., & Allen-Collinson, J. (2021). Learning in sport: From life skills to existential learning. *Sport, Education and Society*, *26*(2), 214-227.

Supriyatno, T., Susilawati, S., & Ahdi, H. (2020). E-learning development in improving students' critical thinking ability. *Cypriot Journal of Educational Sciences*, *15*(5), 1099-1106.

Umrzokova, G., & Pardaeva, S. (2020). DEVELOPING TEACHERSPROFESSIONAL COMPETENCE AND CRITICAL THINKING IS A KEY FACTOR OF INCREASING THE QUALITY OF EDUCATION. *Mental Enlightenment Scientific-Methodological Journal*, *2020*(2), 66-75.

Wechsler, S. M., Saiz, C., Rivas, S. F., Vendramini, C. M. M., Almeida, L. S., Mundim, M. C., & Franco, A. (2018). Creative and critical thinking: Independent or overlapping components?. *Thinking Skills and Creativity*, *27*, 114-122.

Whitley, M. A., Massey, W. V., & Wilkison, M. (2018). A systems theory of development through sport for traumatized and disadvantaged youth. *Psychology of Sport and Exercise*, *38*, 116-125.

Wrahatnolo, T. (2018). 21st centuries skill implication on educational system. In *IOP Conference Series: Materials Science and Engineering* (Vol. 296, No. 1, p. 012036). IOP Publishing.