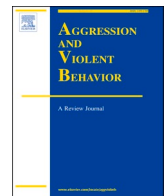




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Physical education and its role in improving the health of college students by active participation and optimization by deep learning

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ABSTRACT

Lack of physical exercise leads to many complicated diseases such as obesity, diabetes, and cardiovascular diseases, or even death in certain cases. College students are at an age where their physical activity levels decline. Physical education may be beneficial in preserving the student's life and improve their health condition. This paper aims to provide support and optimization using a deep learning approach for the students in their college environment. Deep Learning (DL) allows the students to create their areas of interest and set their own rules, leading to active participation. DL increases the students' level of participation by providing effective communication, collaboration, creativity, technological advancement, critical thinking, personalized and real-time learning. The participation of the students can be initiated by allowing them to select a game and exercise routine in their area of interest. If one team does exercise, then another team will participate in the game of their choice. With the help of DL, they can change a rule or adapt a constant. With a lot of training, they will figure out how to excel in their physical activity. This program aims to involve everyone in this task, and nobody should be left out. The critical aspects such as the low performance of a student in physical activity are considered significantly critical and should be maximized to improve the accuracy of the student's performance. Students should take their failure as an opportunity to discover an alternate approach to succeed in it. Optimization is provided by selecting the best approach for each student from the set of available approaches by reducing the student's perception level and increase motivation to engage in each activity. Physical training has a positive impact on the student's health with a 94% increase in energy expenditure and 82% in the fitness rate of the students. The deep learning approach used maximized efficiency in increasing the students' participation and performance level up to 92%.

1. Introduction

Physical Education (PE) is an educational course that makes college students indulge in any physical activity of their choice. Colleges normally omit PE in their curriculum. PE is not only related to physical fitness and sports. It is mainly associated with healthcare. Introducing physical activity in adulthood helps the students to carry it out in their entire lifetime. College students are mainly inactive during their leisure time. To improve one's life, they have to show more care towards their health. Physical Activity plays a major role in maintaining the college student's physical and mental health (Phan et al., 2018a). Mental illness affects college students (students entering adulthood) more than physical illness. Because the major reason college students drop out is due to

mental illness. Even though the students are well versed in their studies and achieved high grades, they find it hard to cope with the everyday struggles they go through in their college. Students hide their mental illness very well in the physical world. Deep inside, they suffer from depression. One in every five students has mental illness in college; they are good at hiding it. Hence, mental illness can be termed as the major reason that affects college students without earning their degrees. The main reason is that professors think college students are energetic and can solve their problems without help. The mental illness that affects college students in the past thirty years can be demonstrated by the graph shown in Fig. 1.

To overcome this problem, PE can be introduced in colleges and allow the active participation of students. The physical health benefits

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