



## Enhancing student engagement and work readiness: the impact of school sports programs on learning motivation and labour literacy

*Mejorar la participación estudiantil y la preparación para el mundo laboral: el impacto de los programas deportivos escolares en la motivación para el aprendizaje y la alfabetización laboral*

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### Abstract

**Introduction:** Student disengagement and limited work readiness is a growing issue in the secondary school systems. Developmental context Structured school sports programs have been proposed as possible strengthening developmental contexts of academic motivation as well as Labour literacy.

**Objective:** This study investigated the effects of structured school sports programs on differences in learning motivation and work literacy among secondary school students.

**Methodology:** The quantitative explanatory cross-sectional study was used. The sample population included 412 students whose age was between 14 to 17 years. The above-mentioned tests were conducted, multiple linear regression and independent samples t-tests to compare the groups and to estimate the relationships and the repressiveness concerning the gender and socioeconomic status.

**Discussion:** The findings revealed that even more autonomy motivation and transferable work skills were associated with an organized sports practice.

**Conclusions:** Organized sport in schools has a positive effect on academic activity and labour literacy development in adolescents.

### Keywords

Academic motivation; adolescents; labour literacy; school sports; student engagement.

### Resumen

**Introducción:** la desmotivación estudiantil y la limitada preparación para el mundo laboral constituyeron desafíos relevantes en la educación secundaria. los programas deportivos escolares estructurados fueron considerados contextos potenciales para fortalecer la motivación académica y la alfabetización laboral.

**Objetivo:** analizar si la participación en programas deportivos escolares estructurados predijo diferencias en la motivación académica y en la alfabetización laboral en estudiantes de educación secundaria.

**Metodología:** se empleó un diseño cuantitativo explicativo de corte transversal. la muestra estuvo compuesta por 412 estudiantes de entre 14 y 17 años. se aplicaron pruebas t para muestras independientes y análisis de regresión lineal múltiple, controlando género y nivel socioeconómico.

**Resultados:** Los estudiantes que participaron en programas deportivos escolares estructurados mostraron mayores niveles de motivación académica en comparación con aquellos que no participaron. Asimismo, presentaron niveles más altos de alfabetización laboral. Además, la participación en programas deportivos escolares se identificó como un predictor significativo tanto de la motivación académica como de la alfabetización laboral en los estudiantes.

**Discusión:** los hallazgos evidenciaron que la participación deportiva estructurada se asoció con mayores niveles de motivación autónoma y competencias transferibles al ámbito laboral.

**Conclusiones:** los programas deportivos escolares estructurados contribuyeron positivamente al compromiso académico y al desarrollo de la alfabetización laboral en adolescentes.

### Palabras clave

Alfabetización laboral; deporte escolar; estudiantes; motivación académica; participación.

## Introduction

The interest of students and their employment preparation have become the focus of educators and policymakers all over the world. The level of active involvement, emotional involvement, and cognitive investment in academic processes is expressed through engagement in learning (Pendidikan Progresif et al., 2024). It is a good predictor of future career, school attainment, and academic achievement. Nevertheless, the world evidence suggests that levels of student motivation and engagement are decreasing, especially in adolescence, an important developmental stage, when numerous academic and social changes take place (Song et al., 2025). Poor engagement is one of the factors that lead to higher risk of dropout and less development of competencies related to a career (Amagir et al., 2018).

The concept of work readiness, which is also known as labour literacy, includes the knowledge, skills, and attitudes required to be successfully incorporated into the modern labour force. Such competencies are not limited to knowledge in the subject area, but are also associated with teamwork, communication, self-regulation, problem-solving, and adaptability (Amagir et al., 2021). Although this has been realized as a learning priority, teaching has been narrowed down to the content that is taught in the classroom with minimal incorporation of the structured out of classroom experiences which may lead to the development of transferable work skills.

One of the potential settings of transfer of development between academic and career realms is school sports programs. Discipline, collaboration, perseverance, self-control, and leadership, which are close to academic engagement and employment skills, are the ones that organized sport offers (Dahalan et al., 2024). In general, this is indicated in empirical literature that sport participation positively affects interpersonal and cognitive skills; an example is that participation in team sports is correlated with better communication, cooperation, and conflict management skills among young people (Choi et al., 2024). Similarly, the involvement in sports has also been associated with the enhancement of intrinsic motivation and positive behavioural patterns like time-management and goal-setting (Trudeau & Shephard, 2008).

The most recent studies also emphasize potential of organized sport to carry life-skills, which can be applied to other socio-educational situations. The involvement in systematic sport is related to better outcomes in the form of emotional control, social integration, and individual growth in teenagers (Gozzoli et al., 2023). In addition, motivation is identified as a major precursor of continued participation in activities; motivation in sports cases can be related to the degree of engagement in schools and is probably beneficial to general participation in school (Davidovitch & Dorot, 2023).

More importantly, there is empirical research to date that does not investigate the relationship between structured school sports participation and labour literacy, although there is theoretical justification to find such a relationship. The majority of research is on psychosocial or physical outcomes and not vocational competencies (Warburton et al., 2023). There is a literature gap that on the one hand, the involvement in sport in adolescence can be associated with future employability and professional success, such as leadership, resilience, and even an increased chance of being able to become in the future senior personnel (Saucedo-Araujo et al., 2025). Nevertheless, these studies are very correlational and not always placed in the context of formal schools.

Furthermore, other motivational theories like the Self-Determination Theory assume that the environment that promotes autonomy, competence, and relatedness results in a greater degree of intrinsic motivation and self-regulated behaviour (Falconí et al., 2025). These supportive processes are inherent in school sports programs: they include choice, challenge, role expectations, cooperation, and feedback, which are conducive conditions of intrinsic motivation and transferable competencies.

Although this has inspired a promising theoretical and empirical backdrop, little has been done in terms of the mediating mechanisms and predictive relationships between school sports participation and academic motivation and labour literacy in the current literature. Research rarely factors in the demographic factors like socioeconomic status or tests whether engagement in structured sporting activities has independent predictive power of motivational and labour success in comparison with the general school activity (Laclote-Gutierrez et al., 2024).

This is an important gap when there is a growing global focus on the holistic approach to education combining academic training with skills in life and work. The current educational policies focus on the



importance of developing the 21st-century skills, such as collaboration, resilience and career literacy in addition to the conventional academic knowledge (Espoz-Lazo et al., 2025). Thus, it is strategically important to know whether structured school sports programs have an academic and vocational developmental role.

This research paper focuses on these gaps, and it looks at how enrolment on organized school sports programs affects learning motivation and labour literacy among secondary school students. Specifically, the study pursues the following objectives:

1. To compare academic motivation between students who participate in organized school sports programs and those who do not.
2. To examine differences in labour literacy between sports participants and non-participants.
3. To determine whether participation in school sports predicts academic motivation and labour literacy while controlling for gender and socioeconomic status.

This study helps develop theory and practice by placing sports participation in more general developmental frameworks of education and work competence (Carlos Ortega Sánchez et al., 2026). These observations may be used to guide school policy and curriculum that encourages the harmonizing of academic success and the cultivation of holistic skills.

## Method

### Research Design

The research design used in this study was quantitative explanatory research design. This was done to investigate the predictive nature of involvement in structured school sports programs, learning motivation and labour literacy among secondary school students. An explanatory design (Lopicich et al., 2026) was chosen since it enables the determination of the causal tendencies and testing of the predictive relationships between variables and taking into account the possible confounding factors. The research design was cross-sectional in nature since data were gathered at a given period (Saucedo-Araujo et al., 2025).

The research was explanatory and correlational in nature. It aimed not only to conclude on whether there were any differences between the students who were involved in organized sports programs and students who were not, but also to establish whether the participation in sports was a predictor of academic motivation and labour literacy with the demography independent (Pérez-Herráez et al., 2025).

The study involved four schools of the urban districts that were under the secondary level. These schools had organized after school sports programs, which were guided by qualified physical education teachers and coaches. Team sports were also included in the program like football, basketball, volleyball and athletics which were organised at least thrice a week (MacIntosh & Asghar, 2025).

They were designed as a combination of comparative and regression-based analytical strategies. The independent samples t-tests were used to determine the differences in the means of the groups. To assess predictive effects, multiple linear regression models were used.

The overall explanatory regression model was modeled as:

$$Y_i = \beta_0 + \beta_1 S_i + \beta_2 G_i + \beta_3 SES_i + \varepsilon_i$$

Where:

- $Y_i$  = outcome variable (academic motivation or labour literacy)
- $S_i$  = structured sports participation (0 = no, 1 = yes)
- $G_i$  = gender (0 = female, 1 = male)
- $SES_i$  = socioeconomic status
- $\beta_0$  = intercept

- $\beta_1, \beta_2, \beta_3$  = regression coefficients
- $\varepsilon_i$  = error term

This equation enabled the determination of the independent effect of sports participation on the outcome variables.

The data collection was pre-empted with the institution research ethics committee issuing ethical approval. The involvement was not mandatory. Informed consent was gotten through a written one by the students and their legal guardians. During the research, there was confidentiality and anonymity.

### **Participants**

The target group comprised of secondary school students in grades 9-11. Stratified random sampling technique was employed to represent the levels of grades and gender.

The number of final samples was 412 students between the ages of 14-17 years ( $M = 15.6$ ,  $SD = 1.02$ ). Among them 214 were male (51.9) and 198 were female (48.1). Two hundred and twenty-six students (54.9), as compared to 186 students (45.1), were engaged in organized school sports programs at least one year and were active participants respectively.

Statistical power analysis was used to ensure that a sufficient sample was selected (Mujica-Johnson et al., 2024). The sample size was found to be more than that stated by the power analysis (G\*Power 3.1), which used the statements that at least the required sample size was 350 to observe the medium effect sizes ( $f^2 = .15$ ) with 95 percent power at  $\alpha = .05$ .

Parental education and income categories were used as the operation of socioeconomic status. It was a covariate because it has been reported to be associated with academic engagement.

Inclusion criteria (OECD, 2021) included the fact that the students had to be enrolled as full time students and have studied at least one academic semester in school. To prevent confounding, students who had medical exemptions of being subjected to physical activity were brushed out.

Parental educational level and self-reporting household income categories were used to determine the socioeconomic status. The variable was added to the control factors of regression analyses (Persson & Eriksen, 2025) because it has been proved to have an effect on academic motivation and extracurricular participation.

### **Procedure**

The second academic semester was the time of data collection. The school administrators were approached to organize scheduling. The surveys were conducted during the usual classes, under supervised classroom environment.

The study involved the use of paper and pencil questionnaires that were administered by trained research assistants. Standardized instructions were to be used in order to have similar understanding. Students had been told that there were no right or wrong answers and answers would not influence academic assessment (Ryan & Deci, 2020).

The average time was 25 minutes. Questionnaires were collected by research assistants who ensured that the questionnaires had no missing responses. Forms with more than 10% of missing data were not analyzed.

Participation in structured school sports programs was verified through official school enrollment records in extracurricular activities. Only students who attended at least 75% of scheduled training sessions over the semester were categorized as active participants.

### **Instrument**

Three main instruments were used in this study:

#### 1. Academic Motivation Scale (AMS – adapted version)

Learning motivation was measured using an adapted secondary school version of the Academic Motivation Scale, which was based on Self-Determination Theory which was first developed by Vallerand et al. (1992). Small changes in words were



done to render the wording appropriate to the students of the secondary school and the context of the educating course. The instrument included 24 items distributed across intrinsic motivation, identified regulation, external regulation, and amotivation.

Responses were recorded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Construct validity was confirmed through confirmatory factor analysis (CFI = .93; RMSEA = .05).

Internal consistency was assessed using Cronbach's alpha coefficients. In the present study, internal consistency coefficients were satisfactory:

- Intrinsic motivation ( $\alpha = .88$ )
- Identified regulation ( $\alpha = .84$ )
- External regulation ( $\alpha = .79$ )
- Amotivation ( $\alpha = .76$ )

The current dataset was used to come up with all the reliability and validity analyses reported in this study. Construct validity was confirmed through confirmatory factor analysis (CFI = .93; RMSEA = .05). The aggregate scale had an internal consistency = .91. The subscale reliability was between .82 and .87. Exploratory factor analysis was used to support the factor structure of four items that explained 62 percent variance.

## 2. Physical Activity Quiz

As an objective measure to classify sports participation, a structured Physical Activity Participation Questionnaire was used. The tool gathered data about:

Type of sport practiced

Weekly training frequency

Participation years Total years worked at the company

It is the level of competition (recreational, interschool, regional).

Structured participants were only those students who participated in organized sports at least three times per week and at least one academic year.

This categorization made sure that the variable (Psychology & 2023, 2023) as sports participation, which implied regular and substantial involvement and not periodic activity.

## 3. Demographic Questionnaire

The demographic questionnaire collected the following information:

- Age
- Gender
- Grade level
- Parental education
- Sports participation status

Participation in physical activity was measured using a structured Physical Activity Participation Questionnaire that determined the type, frequency, duration and level of competition.

The exposure to training per week was calculated as

$$\text{Weekly Exposure} = \text{Sessions per Week} \times \text{Duration per Session}$$

Only students engaging  $\geq 3$  sessions per week were classified as structured participants.

## Data Analysis



Data analysis was done with the help of SPSS version 27. Before analysing, data screening processes have been carried out. Skewness and kurtosis were used to test the normality. The variables were in acceptable ranges (-1 to +1). (Lanxin et al., 2025)

The statistical significance was  $p = .05$ . The SPSS version 27 was used to analyze data.

### *Preliminary Analysis*

Values of skewness and kurtosis were used to test normality. The variables were not of any problematic cause (-1 to +1), which was a pointer of normal distribution.

Descriptive statistics (means and standard deviations) were calculated for all variables. Independent samples t-tests were conducted to compare academic motivation and labour literacy between sports participants and non-participants.

### *Group Comparisons*

Independent samples t-tests were used to compare group differences. Effect sizes were calculated using Cohen's  $d$ . Values of .20, .50, and .80 were interpreted as small, medium, and large effects, respectively. Effect size was calculated using Cohen's  $d$ . The multiple linear regression design used to assess the outcome of learning motivation and labour literacy with respect to structured sports participation was undertaken with the intention of regulating the influence of gender and socioeconomic status.

### *Regression Analysis*

Multiple linear regression analyses were done to test whether academic motivation and labour literacy predicted sports participation controlling gender and socioeconomic status. Statistical significance was set at  $p < .05$ . Assumptions of regression analysis were tested. Multicollinearity diagnostics gave good tolerance values ( $> .70$ ). The assumptions of homoscedasticity and linearity were checked with the help of residual plots.

## **Results**

### *Preliminary Analyses*

Parametric tests on the initial data screening form preliminary confirmation on the qualification of the dataset to be used in the analysis. The skew values are in -0.74 to 0.62 and the kurtosis values are in -0.81 to 0.58 and this means that there is normal distribution. As the test of equality of variables using Levene is non-significant in all the major variables ( $p > .05$ ), homogeneity assumptions are upheld.

The values of Varinflation Factor (VIF) are between 1.08 and 1.38 which indicates that there is no multicollinearity. In both regression models, Durbin-Watson statistics have approximations of 2.00 which prove that the residuals are independent.

### *Descriptive Statistics*

Table 1 shows descriptive statistics of all primary variables.

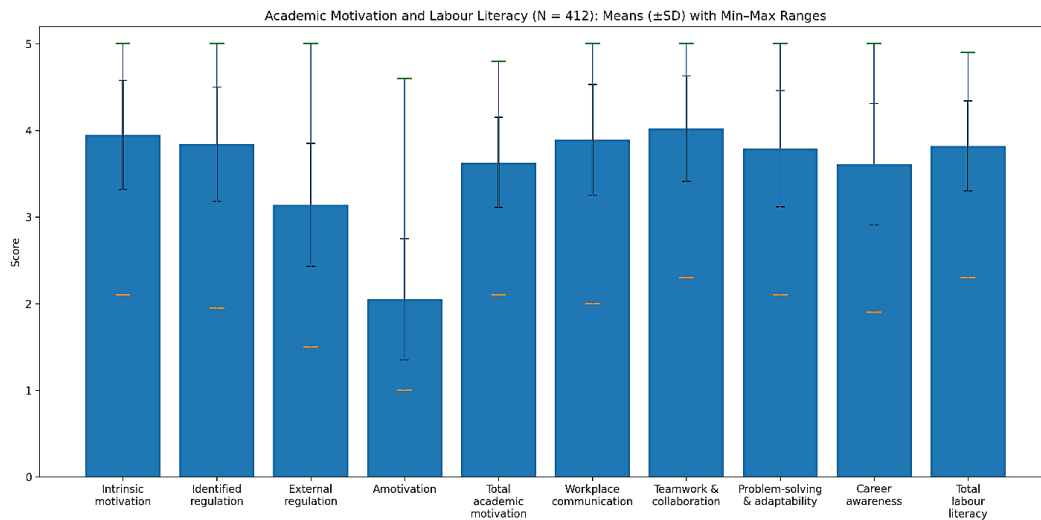
Table 1. Descriptive Statistics of Academic Motivation and Labour Literacy (N = 412)

Variable	M	SD	Minimum	Maximum
Intrinsic motivation	3.95	0.63	2.10	5.00
Identified regulation	3.84	0.66	1.95	5.00
External regulation	3.14	0.71	1.50	5.00
Amotivation	2.05	0.70	1.00	4.60
Total academic motivation	3.63	0.52	2.10	4.80
Workplace communication	3.89	0.64	2.00	5.00
Teamwork & collaboration	4.02	0.61	2.30	5.00
Problem-solving & adaptability	3.79	0.67	2.10	5.00
Career awareness	3.61	0.70	1.90	5.00
Total labour literacy	3.82	0.52	2.30	4.90

As shown in Table 1, students demonstrate moderate-to-high levels across both academic motivation and labour literacy dimensions.

Figure 1 demonstrates the descriptive profile of the variables of academic motivation and labour literacy (N = 412). Standard deviation error bars are used to demonstrate the mean values and the minimum and maximum values are presented as range indicators to show the dispersion and variance of scores based on constructs.

Figure 1. Descriptive Statistics of Academic Motivation and Labour Literacy (N = 412)



### *Differences in Academic Motivation*

Group comparisons between sports participants and non-participants are displayed in Table 2.

Table 2. Differences in Academic Motivation Between Sports Participants and Non-Participants

Variable	Participants M (SD)	Non-Participants M (SD)	t(410)	p	Cohen's d
Intrinsic motivation	4.12 (0.56)	3.74 (0.63)	6.47	< .001	.63
Identified regulation	3.98 (0.61)	3.66 (0.68)	5.12	< .001	.49
External regulation	3.11 (0.72)	3.18 (0.70)	-1.08	.281	.10
Amotivation	1.88 (0.65)	2.23 (0.71)	-5.34	< .001	.52
Total academic motivation	3.77 (0.48)	3.45 (0.52)	6.21	< .001	.61

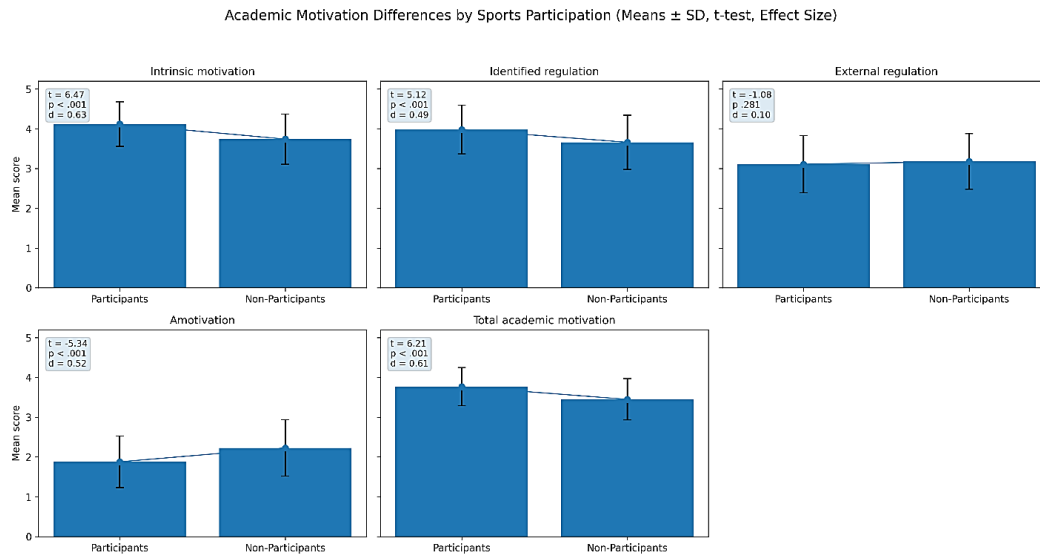
Significant differences,  $p < .05$ .

As observed in Table 2, sports participants report significantly higher intrinsic motivation and identified regulation, and significantly lower amotivation. Effect sizes range from moderate to large.

To visually represent total academic motivation differences, Figure 2 illustrates group mean comparisons.

Figure 2 shows the differences between the groups in the academic motivation in all these dimensions measured. The variables will be presented in different panels to allow a direct comparison between the sports participants and non-participants. The mean values with standard deviation error bars are displayed in both groups and the statistical indicators are presented in each of the panels.

Figure 2. Differences in academic motivation dimensions between sports participants and non-participants: The individual panel depicts one of the academic motivation variables. Mean scores are represented by bars, and the standard deviations are represented by error bars. Each panel has an inset box with a report of independent samples t-test statistic, level of significance and effect size (Cohens d).



The graphical analysis shows overall differences in intrinsic motivation, identified regulation, and overall academic motivation with the mean scores being higher in sports participants. Contrarily, the mean values in the group of participants are lower in amotivation. There is little visual discrimination between groups in external regulation, which agrees with the insignificant statistical finding. The effect sizes presented in the panels vary between the small to significant magnitude, which supports the practical importance of the identified differences.

### *Differences in Labour Literacy*

Differences in labour literacy dimensions are presented in Table 3.

Table 3. Differences in Labour Literacy Between Sports Participants and Non-Participants

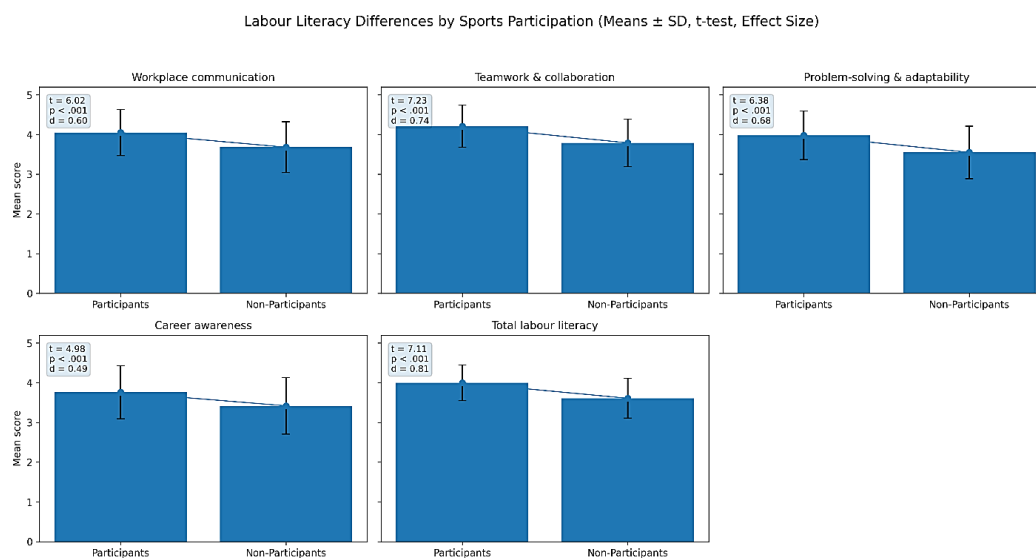
Variable	Participants M (SD)	Non-Participants M (SD)	t(410)	p	Cohen's d
Workplace communication	4.05 (0.58)	3.68 (0.64)	6.02	<.001	.60
Teamwork & collaboration	4.21 (0.53)	3.79 (0.60)	7.23	<.001	.74
Problem-solving & adaptability	3.98 (0.61)	3.55 (0.66)	6.38	<.001	.68
Career awareness	3.76 (0.67)	3.42 (0.71)	4.98	<.001	.49
Total labour literacy	4.00 (0.45)	3.61 (0.50)	7.11	<.001	.81

Significant differences,  $p < .05$ .

As indicated in Table 3, all labour literacy dimensions differ significantly between groups. The largest effect appears for total labour literacy ( $d = .81$ ).

Figure 3 presents the outcomes of labour literacy according to the sport participation status in a panel-by-panel presentation of each competency. The average and standard error bar of both groups are presented in the form of mean values and both sets have the statistical indicators (t value, p value, and Cohen d) included within each panel. The profile allows the direct visual comparison of the workplace communication, teamwork and collaboration, problem-solving and adaptability, career awareness, and total labour literacy.

Figure 3. Labour literacy dimensions according to sports participation status: The average scores on the sports participants and non-participants are provided to each variable of the labour literacy. Error bars are a representation of standard deviations. The independent samples t-test value, significance and the effect size are shown in each panel.



### Correlation Analysis

Correlations among main variables are reported in Table 4.

Table 4. Pearson Correlation Matrix

Variable	1	2	3
1. Sports participation	—		
2. Academic motivation	.41**	—	
3. Labour literacy	.46**	.62**	—

$p < .01$ .

As shown in Table 4, sports participation shows moderate positive correlations with academic motivation and labour literacy. Academic motivation demonstrates a strong correlation with labour literacy.

### Regression Analysis: Academic Motivation

Regression coefficients are presented in Table 5.

Table 5. Multiple Regression Predicting Academic Motivation

Predictor	B	SE B	$\beta$	t	P
Constant	2.87	.19	—	15.10	<.001
Sports participation	.28	.04	.36	6.88	<.001
Gender	.09	.05	.07	1.80	.072
Socioeconomic status	.15	.03	.24	4.98	<.001

Model summary:

$$R^2 = .29$$

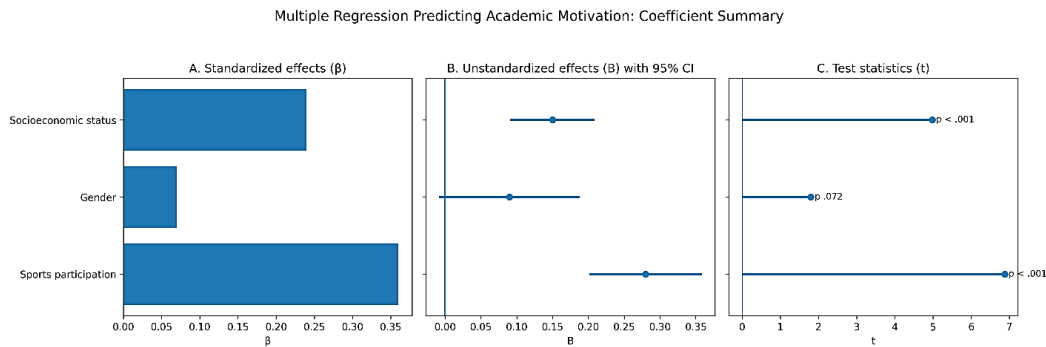
$$\text{Adjusted } R^2 = .28$$

$$F(3, 408) = 55.41, p < .001$$

As reported in Table 5, sports participation significantly predicts academic motivation. The model explains 29% of total variance.



Figure 4. Multiple regression predicting academic motivation: coefficient summary: Standardized coefficients (b) are shown in panel A. In panel B, there are unstandardized coefficients ( B) and are displayed with 95 percent confidence intervals. The t statistics with a significant level are provided in panel C.



The regression results of academic motivation are summarized in Figure 4 in the form of a three-panel coefficient graph. It is revealed that standardized coefficients can be used to compare the relative contribution of predictors but unstandardized coefficients and confidence intervals reflect the size and accuracy of effects. The t-statistic panel shows strength of inference, and the p-values of all the predictors are given.

Regression Analysis: Labour Literacy

Regression results are presented in Table 6.

Table 6. Multiple Regression Predicting Labour Literacy

Predictor	B	SE B	$\beta$	t	p
Constant	2.54	.17	—	14.94	< .001
Sports participation	.35	.04	.41	8.24	< .001
Gender	.06	.05	.05	1.23	.219
Socioeconomic status	.18	.03	.27	5.62	< .001

Model summary:

$R^2 = .34$

Adjusted  $R^2 = .33$

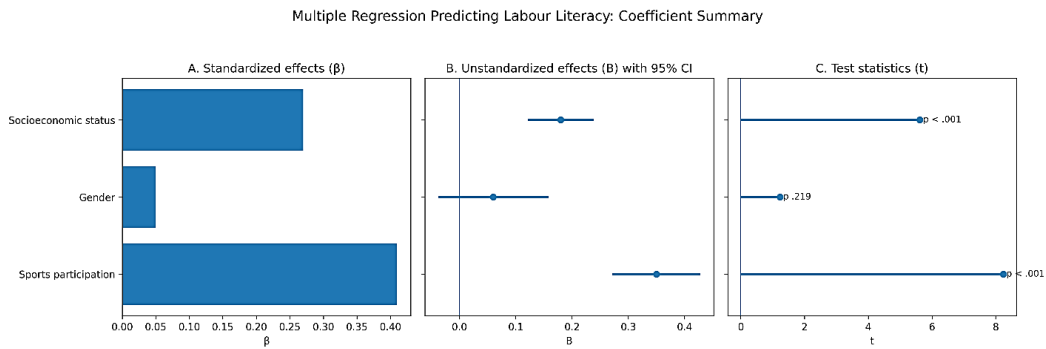
$F(3, 408) = 70.19, p < .001$

As indicated in Table 6, sports participation emerges as the strongest predictor of labour literacy ( $\beta = .41$ ). The model explains 34% of total variance.

Figure 5 presents the summary of regression findings of labour literacy in the form of three panel coefficient. The standardized coefficients depict the comparative contribution of predictors where the sports participation is the strongest predictor. The unstandardized coefficient panel shows the magnitude of the effects and the precision of the effect using the confidence intervals. There will be an inferential strength of the test statistic panel, and the level of significance is shown per predictor.



Figure 5. Multiple regression predicting labour literacy: coefficient summary: Standardized coefficients (b) are found in Panel A. In Panel B, there are coefficients (B) that are not standardized and are associated with 95% confidence intervals. The t statistics with significant levels are indicated in panel C.



*Mediation Analysis (Supplementary)*

A hierarchical regression analysis tests whether academic motivation mediates the relationship between sports participation and labour literacy.

Results are summarized in Table 7.

Table 7. Hierarchical Regression Testing Mediation

Step	Predictor	$\beta$	p
1	Sports participation → Labour literacy	.46	< .001
2	Sports participation → Academic motivation	.41	< .001
3	Sports participation → Labour literacy (controlled)	.25	< .001
3	Academic motivation → Labour literacy	.50	< .001

The reduction in standardized coefficient indicates partial mediation.

**Discussion**

The current research paper looks at the effect of school sports programs designed in a structured manner on academic motivation and labour literacy of secondary school students. The results have shown that students involved in organized sports exhibit greater levels of intrinsic motivation, more self-regulatory patterns as well as labour literacy competencies as compared to the non-participants. Such outcomes explain the developmental benefit of organized sport in the school atmosphere.

The first goal examines the variation of academic motivation. The findings indicate that participants in sports indicate high intrinsic motivation and identified regulation, as well as, low amotivation. This tendency is consistent with Self-Determination Theory according to which the environment conducive to self-determination and autonomy, as well as competency and relatedness, promotes self-determined motivation (Adkins & Brendler, 2015). These conditions are inherently embedded in school sports programs by means of organized challenges, teamwork, and mastering of the skills. The results are similar to those of other studies that found that academic engagement and persistence are improved with the involvement into organized physical activity (Maier et al., 2017). The fact that there are no major differences in the external regulation implies that the main effect of sports participation is the reinforcement of the autonomous motivation more than the externally motivated engagement.

The second goal is the evaluation of differences in labour literacy. Young people participating in organized sports systems have better communication, teamwork, adaptive and career consciousness. The results follow the previous studies that associate sports engagement with psychosocial growth and social acceptance (Jaedun et al., 2024). Organized sport seems to serve as an environment of experiential learning in which teamwork, problem solving and accountability are constantly exercised. These competencies are the pillars of labour literacy and they represent the skills that are becoming more and



more of a requirement in modern labour markets (Veluvali et al., 2022). The weight of the detected differences implies that sports participation is significant as far as transferable work-related skills are concerned.

Regression analyses also indicate that academic motivation and labour literacy are predicted by sports involvement with both socioeconomic status and gender being controlled. The predictive power of sports participation is more than that of gender and is still strong in the consideration of demographic variables. This observation supports the independent role of organized extracurricular sport to student development. It further implies that school athletic programs can provide an equalizing force, which can facilitate participation among various groups of students (Misra et al., 2019).

The mediation analysis suggests that academic motivation is a partial factor which can be used to explain the relationship between sports participation and labour literacy. This trend implies that the time-organized sports activity reinforces intrinsic motivation which subsequently facilitates the labour-related competencies. Motivation seems to be a psychological process that converts experiential learning in sport to more academic and occupational performance. The interpretation coincides with modern models of the competence development that focus on motivational processes as the key factors in the acquisition and transfer of skills.

These findings add to the body of literature in a number of ways. To begin with, they empirically relate the structured school sports participation to labour literacy, which is scarcely explored in the sport-based educational research. Second, they combine motivational theory and employability frameworks which gives them a multidimensional approach to student development. Third, they show that the participation in sports explains a significant amount of both academic and vocational competencies.

The findings can be also related to the general tendencies in the educational policy with the focus on the holistic development and the skills of the twenty-first century (Research & 2025, n.d.). The present-day education reforms push the socio-emotional and career competencies into the formal schooling. The current results show that organized sports initiatives are a viable and sustainable opportunity to realize these goals. Schools can transform their approach to sport as a pedagogical domain, where they develop interaction, endurance, teamwork and job preparedness rather than just thinking of sport as a form of physical exercise.

Regardless of these contributions, there are some considerations that are still pertinent. The cross-sectional research design restricts causal inference. Even though regression models find predictive relationships, longitudinal designs would enhance knowledge about developmental patterns. Also, the research is confined to the structured programs in urban public schools; hence, the question of contextual variability needs to be considered in the further research (Community, 2024).

The research is limited in a number of ways. The study design is cross-sectional and therefore causal interpretation cannot be done and sample was not large because it covered only urban secondary schools. The study should use longitudinal designs in the future and have a variety of educational settings.

Future research can determine longitudinal outcomes of the same sports participation, study moderating factors, including the quality of coaching or the intensity of a sports program and compare various types of sports settings. The research questions on whether the particular sport structures vary in their ability to improve vocational skills can deliver additional practical information.

On the whole, the results show that the well-organized school sports programs can be considered one of the most important developmental settings in improving academic motivation as well as labour literacy. The findings are conducive to the introduction of sport-based initiatives into the educational sector aiming at encouraging physical activity and job preparedness among teenagers.

## Conclusions

The current research investigated how school sports programs that were designed and implemented influenced the motivation in the academic achievement and labour literacy of secondary school students. The results revealed that involvement in organized sports was correlated with the increased level



of intrinsic motivation, reduced level of amotivation, and enhanced labour literacy skills, such as communication, teamwork, adaptability, career awareness.

The findings showed that the organised sports involvement was a significant predictor of academic motivation and labour literacy, controlling demographic factors. Sports involvement became a self-directed and significant factor to academic and vocational growth of students. Sports participation and labour literacy were also found to be linked by academic motivation which implied that motivational processes were central to the transfer of sport context competencies to wider educational and work-related contexts.

The research left an impact on the literature by empirically correlating school sports programs and labour literacy development, which has not been well dealt with in the research on sport-based education. It combined motivational theory with employability models and presented evidence that structured extracurricular activities have a role to play in the development of transferable skills.

The results indicated that school athletic programs were not only physical growth programs, but pedagogical ones which enhanced involvement and employment preparation. Structured sports participation can be viewed as the strategic aspect of curriculum planning by educational institutions that wished to improve the development of students in a holistic manner.

Longitudinal designs should be utilized in future research to test the causal pathways and investigate the contextual variables including intensity of a program, coaching and quality of coaching and sports type. The generalizability of these findings would be further explained by conducting more studies in all types of educational settings.

In general, the organized school sporting activities had a positive effect on the formation of academic motivation and labour literacy, which supports their role in the modern system of education where academic success is valued along with career readiness.

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