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The Level of Sports Participation and Academic Success among Malaysian Student-Athletes

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Abstract. There has been an ongoing debate about the relationship between student-athletes and their academic success. Some believe that student-athletes can never excel with their academic studies, especially those who participate to a high level in sports. Hence, the aim of this study is to examine the level of sports participation and academic success among Malaysian student-athlete. A cross-sectional study with open-ended questions was performed on 836 student-athletes who volunteered to participate in this study (Age, 21.13±1.23 years old; weight, 63.18±7.50 kg; height, 169.34±4.82 cm; BMI, 22.01±2.72 in score index). Data collection was executed through a web-based online platform, namely Google Forms, whereas analysis of one-way ANOVA was performed to analyze the differences in the level of sport participation towards academic success. Sports participation consists of involvement at the national, state, university, club and college levels, whereas academic success or performance was examined through Cumulative Grade Point Average (CGPA). As a result, the mean of CGPA among respondents was in category 3 which was between 3.01 – 3.33 points. Other than that, this study fails to reject the hypothesis ($p > .05$, $F(4, 831) = .64$) where there is no statistically significant difference among student-athletes in their level of sport participation and academic success. It can be concluded that regardless of student-athletes' levels of sport participation, no difference detected in their academic success. As a recommendation, future studies can explore the extent of similarities in the student-athlete's academic success.

Keywords: academic achievement; athlete education; comparison study; learning environment; sport involvement

1. Introduction

Students involved in sports and are representatives at any level of participation are called student-athletes. 'Student-athlete' is a term used principally to describe

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students that enrolled in higher educational institutions like universities or colleges who participates in an organized and competitive sport. A student athlete must fill dual responsibilities; as a student and as an athlete (Gomez et al., 2018). Consequently, they have less free time as they have to attend classes, training sessions and competition. These required energy and determination in order to succeed. Therefore, at some point they are also called as scholar-athletes to define students who want to develop a broad, holistic approach to education and committed to be successful high-level sport performance (Cross & Fouke, 2019). On the other hand, the advantages of being a student-athlete that competing at the national or international level, they received financial and services support from higher education institutions (Gomez et al., 2018). Therefore, in the context of this present study, student-athlete can be defined as full-time, registered students who are representatives at any level of sport participation with or without financial support.

Due to dual responsibilities of student-athletes, it could be challenging them to balance their time between classroom and training sessions. It is well known that the purpose of higher education is for academic excellence and preparing the next generation of scholars as well as encourages students to build character to become future leaders of the nation. Based on Self-Determination Theory (SDT) by Rayn and Deci (2000), the motivation and personality highlighted important part of human for successful. SDT is typically linked to accomplishment and success aids for an individual. Hence, motivation and personality of student-athlete need to higher academic and sport participation success.

Previous research disagreed that taking part in sports will leave negative effects on academic performance (Routon & Walker, 2015; Muñoz-Bullón et al., 2017; Schultz, 2017; Guo et al., 2019). As stated by Robst & Keil (2000), involvement in sports inhibits students' abilities to perform well in the classroom because of the practice and travel commitments that consume time and energy. Therefore, researchers began to engage in the debate regarding the effects of student-athletes' engagement in sports on their academic success (Guo et al., 2019; Yarkwah & Agyei, 2020).

Research evidence showed that even though student-athletes required to spend most of their time and energy in sports training, there was a positive effects of sports participation on students' academic achievement. Yarkwah & Agyei (2020) reported the differences between student-athletes and non-student-athletes academic achievements. They found there was no negative effect due to involvement in sports. In fact, sports involvement positively influences student-athletes' on their academic success (Abieraba et al., 2019). More evidence showed a positive association between sport participation and academic performance in several variables such as ethnic (Bang et al., 2019), athletic status and time spent doing sports (Rao et al., 2018), level of participation (Schultz, 2017) and gender (Dyer et al., 2017). In addition, it was reported that even at high school's level, the involvement in sports did not affect their academic achievement even after the implementation of K-12 curriculum (Billonid et al., 2020). At this point, it can be concluded that there are several factors that contribute to the positive effects of

sport participation on academic achievement. Sport training encourage focusing, repetition and memorization, these skills can be implemented and useful in the classroom environment (Rao et al., 2018). Other benefits include; increased physical fitness and mental health (Jakiwa et al., 2020; Andersen et al., 2019; Snedden et al., 2019), improved biological and psychological maturation (Malm et al., 2019; Jasni et al., 2022) and boost self-confidence and self-discipline (Robst & Keil, 2000). Each of these factors is very crucial to help student-athletes in the classroom learning environment. Hence, parents and educators must encourage students to participate in sports by eliminating the perception that sports will worsen their academic success (Yarkwah & Agyei, 2020).

In contrast, some studies have reported negative effects of participation in sports on academic success. For instance, Robst & Keil (2000) reported that student-athletes who played at National Collegiate Athletic Association (NCAA) university Division III had a lower average academic success (CGPA) when compared to non-student-athletes. In line with this finding, Routon & Walker (2015) indicated that being involved in college sports can negatively affect academic success. However, Gadzic (2009) justified that participating in sports is not a main contributor to academic success; rather, it is affected by various factors such as self-learning motivation and teachers' assistance. Some of the negative effects on academic success include more hours of practice and preparation for the game (Grimit, 2014), spending more hours on partying, social activities and alcohol consumption after the training session (Routon & Walker, 2015), overtraining and lack of communication between athletes and coaches (Gomez et al., 2018) and exhaustion and fatigue (O'neill et al., 2017).

In the context of the National Defence University of Malaysia's (NDUM) student-athletes, levels of sport participation can range from intra-varsity to national-level competitions. Each level of participation requires a different demand for time and energy in training and competition. For national or high-performance athletes, training and practice are highly demanding as they are required to follow the training schedule and work closely with their coaches. Now and then, they need to be away from the university due to representing the country, state or club. Typically, national-level student-athlete allocated more than 20 hours a week for training, practice, recovery and physical training sessions (Gomez et al., 2018). Meanwhile, the demand for training among student-athletes at the state, university, club and college levels are relatively lower compared to national-level student-athletes (Schultz, 2017). These athletes are only entail to attend centralize training when there is a competition. Most of the time, they do not have any regular training and competition throughout a year. However, each student-athlete regardless of level of sport participation has been involved in sports during their academic journey. Therefore, this study hypothesizes that there are no differences in academic success regardless of the level of sport involvement. Moreover, the objective of this study is to examine the influence of sport participation level on academic success among student-athletes.

2. Methodology

2.1 Study Respondents

This study was conducted among university students at the National Defence University of Malaysia (NDUM) in 2020. The data of respondents were collected comprising 836 students (660 males and 230 females) who volunteered to participate in this study. The age of respondents ranged from 18 to 27 years old with the age mean of 21.13 ± 1.23 years old. In terms of physical characteristics (Table 1), respondents showed an average weight of 63.18 ± 7.50 kg, an average height of 169.34 ± 4.82 cm and an average Body Mass Index (BMI) of 22.01 ± 2.72 in score index. In order to increase the efficiency of participant selection, simple random sampling was performed. One of the crucial parts in random sampling is that each member of the population has an equal chance of being selected as a participant of the study (Sharma, 2017).

Table 1: Physical characteristics of respondents

Variables	Height (cm)	Weight (kg)	BMI	Age
Mean	168.08	62.35	22.02	21.13
SD	7.33	9.58	2.73	1.23

2.2 Procedure

This study was conducted using a cross-sectional design. Based on Wang and Cheng (2020), cross-sectional design is an observational study that analyzes a population's data at a single time by describing its characteristics, and is typically cheaper, easy to be carried out and most importantly, can be used to create an in-depth research study. This cross-sectional study was conducted through a survey which applied open-ended questions to acquire a broad information about respondents' level of sport participation and academic success.

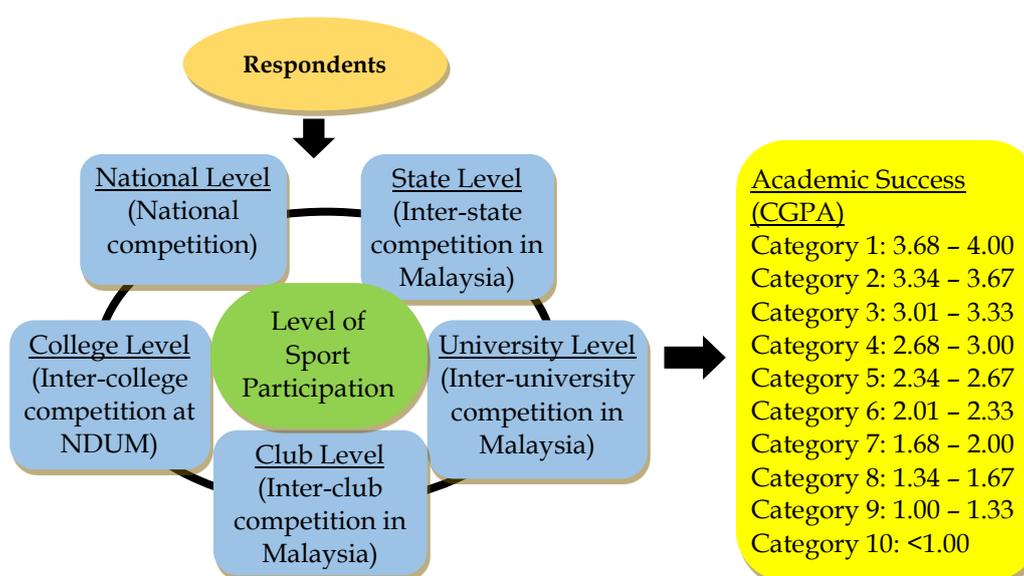


Fig. 1: Paradigm of study design

Figure 1 showed the paradigm of the study with the important variables. There are two vital questions asked: 1) What is your highest level of participation in

sports? and 2) What is your current Cumulative Grade Point Average (CGPA)? In general, there are three sections of questions, namely respondents' background information (section A), level of sport participation (section B) and academic success (section C). All questions were in Bahasa Malaysia as it is a native language of the respondents.

The collection of data was done from January to May 2020 through a web-based online platform, namely Google Forms. Google Forms (<https://docs.google.com/forms/u/0/>) was used to assist in data collection due to its efficiency and user-friendly system. As mentioned by Rayhan et al. (2013), Google Docs and Forms can act as a free and efficient platform for administering questionnaires to any population without downgrading the quality, security and reliability of data. Google Forms is also considered a powerful system for data collection with safety in big data storage because of its collaboration with cloud-based documents (Hsu & Wang, 2017). Hence, characteristics such as unlimited survey, free system and easy accessibility have made Google Forms one of the most popular web-based online platforms for research (Vasanth & Harinarayana, 2016).

In terms of questionnaire distribution, it was done online without any physical or face-to-face meeting with respondents due to the health crisis pandemic Covid-19. In this stage, the emerging issue was the method of sharing the questionnaire's link to respondents. Based on Vasanth and Harinarayana (2016), the questionnaire's link can be shared through Facebook and e-mail. As for this research, the questionnaire's link was shared mostly through WhatsApp and Telegram applications. The selection was due to students' accessibility to these applications as an online communication method with each other.

The potential respondents received the questionnaire's link and would decide whether to complete the questionnaire or not. Those who completed the questionnaire would indirectly agree with the benefits and potential risks of the study and they automatically became respondents in this study. Prior to responding, respondents were asked to answer the questionnaire with honesty and integrity. They were asked to answer the questionnaire without forces or pressures or follow their peers. It took about 10 to 15 minutes to fill the questionnaire. The chances of respondents not responding to all questions were zero because all questions were set as compulsory. As mention to all students, those who were not agreed to any question may withdraw to become a respondent"

2.3 Statistical analysis

Results of the study are presented as means \pm standard deviation (SD). The assumptions of normality and homogeneity of variance of the data were analyze through Kalmogorov-Smirnov tests. Analysis of Variance (ANOVA) as an inferential analysis was used to determine the differences between level of sport participation and academic success among respondents. The statistical analyses were performed using Statistical Package for Social Science (SPSS) version 25.0 with the significance level set at $P \leq 0.05$.

3. Result

As shown in Table 2, a total of 836 respondents with 606 (72.5%) male and 230 (27.5%) female was involved voluntarily in this study. 82.2% respondents (n=669) were aged between 20 to 22, 17.8% (n=167) were 18 - 19 and 23 - 27 years old. Three categories of respondents were involved in this study, namely cadets with 51.8% (n=433), PALAPES (Reserve Officer Training Unit) with 34.3% (n=287) and civilians with 13.9% (n=116). A majority of the respondents were doing bachelor's degree comprising of 754 students (90.2%) followed by diploma students with only 79 (9.4%) of them. In terms of year of study, most of the respondents were in year 1, 2 and 3 with 260 (31.1%), 270 (32.3%) and 268 (32.1%) students respectively whereas only 4.6 % (n=38) students were in year 4 and 5.

Table 2: Respondents' Profile (n=836)

Variables	No. of respondents (n)	Percentage (%)
Sex		
Male	606	72.5
Female	230	27.5
Age		
18	1	.1
19	46	5.5
20	227	27.2
21	257	32.9
22	185	22.1
23	75	9.0
24	16	1.9
25	7	.8
26	2	.2
27	2	.2
Category of respondents		
Cadet	433	51.8
PALAPES	287	34.3
Civilian	116	13.9
Level of Study		
Foundation	2	.2
Diploma	79	9.4
Bachelor	754	90.2
Master	1	.1
Year of Study		
1	260	31.1
2	270	32.3
3	268	32.1
4	34	4.1
5	4	.5

Table 3 showed respondent's level of sports participations. The most respondents representing at university level with a frequency of 415 or 49.6% students. Followed by the college- and club-level participation with a frequency of 199 (23.8%) and 100 (12.0%) students respectively. State level charted the second lowest participation with a frequency of 65 (7.8%) students. Meanwhile, the lowest level of participation in sports was the national level with only 6.8% (n=57) students.

Table 3: Respondents' Level of Sports Participation

Level of Sport Participation	n	%
College	199	23.8
Club	100	12.0
University	415	49.6
State	65	7.8
National	57	6.8

The mean and standard deviation (SD) of academic success among respondents represented in Table 4. The club level produced better in academic performance with mean 3.27 ± 1.14 points followed by college level (3.25 points ± 1.14) and university level (3.20 ± 1.24 points). While, the lowest CGPA scored by student-athlete from state level with mean of CGPA 3.03 ± 1.19 . The overall mean of academic success among respondents was in category 3 which was a CGPA between 3.01 – 3.33. The findings revealed that students' CGPA will not be affected by their level of sport participation.

Table 4: Respondents' Academic Success

Level of Sport Participation	n	Mean of CGPA's Category	SD
College	199	3.25	1.14
Club	100	3.27	1.11
University	415	3.20	1.24
State	65	3.03	1.19
National	57	3.08	1.14

The analysis of differences through one-way ANOVA between level of sport participation and academic success is shown in Table 5. The significance value was set as $p > .05$, $F(4, 831) = .64$. Therefore, this study fails to reject the hypothesis and it can be concluded that there is no statistical significant difference between level of sport participation and academic success. It means that, regardless of student-athletes' level of sport participation, there is no difference in their academic success.

Table 5: One-way Analysis of Variance (ANOVA) between level of sport participation and academic success

	Sum of Square	df	Mean Square	F	Sig.
Between Groups	3.59	4	.89	.64	.64
Within Groups	1178.65	831	1.42		
Total	1182.24	835			

4. Discussion

To the authors' knowledge, this is the first study that investigates the differences in level of sport participation (national, state, university, club and college) towards academic success (CGPA). Even though there was a study regarding sport participation level by Schultz (2017), it was only limited to the level of

participation intra university between senior and junior varsity athletes. Previous studies on sport participation and academic success were conducted by several other researchers such as Insler & Karam (2019), Dyer et al. (2017) and Yusof et al. (2013). Other than that, studies on sport participation had been done specifically in the contexts of linguistics and racial status (Bang et al., 2018), sex and socioeconomic status (Dyer et al., 2017), the black ethnic group (Harris, 2014), middle and high school students (Wretman, 2017), in- and off-season conditions (Schultz, 2017), athletes and non-athletes (Abieraba et al., 2019). Therefore, this study is driven by the essential to gain evidence from different level of sport participation and the relationship to academic success.

The main objective of this study was to examine the differences between level of sport participation towards academic success among student-athletes. Our main findings have indicated no significant difference between level of sport participation towards academic success. However, the mean of CGPA among student-athletes were considered high, which was between 3.01 to 3.33 points. This result was much similar to the findings by Schultz (2017) in which it was stated that the CGPA of student-athletes in and out of season was 3.04 points. Other than that, Routon and Walker (2015) stated that the CGPA of student-athletes based on sports played was between 3.26 to 3.34 points. Also, in line with this study, Robst and Keil (2000) stated that student-athletes who played in NCAA Division III had achieved a CGPA between 2.96 - 3.04 points. Therefore, representing or significantly involved in sports during university studies offers a good result to the CGPA success. This is in agreement with Surichaqui-Tiza et al. (2021) where positive and significant relationship was found between sport participation and academic performance among student's soccer players. It showed that participating in sports is beneficial to student-athlete in terms of teamwork, self-discipline, leadership, exposed to rules and personal characteristics that can transform to classroom learning.

As with other research, the results of this study also confirm that different levels of sport participation require different demands for time, energy and intensities of training and practice. For those who are represented at the national level, they need to spend more time in training and competitions (Atan & Kassim, 2020; Burlow et al., 2018) compared to those that represent at the state level and below. The training commitment is relatively lower and not really demanding (Schultz, 2017). They only need to train and prepare when entering any competition. It means that they do not have any regular training throughout a year as compared to national-level athletes. Nevertheless, this should take into account that regardless of level of sport participation, this student-athlete has been involved in sports. Hence, they still need to spend hours of practice, preparation and attending competitions which would undoubtedly take a student-athletes away from their studies (Grimit, 2014).

Regardless of level of sport participation that students engaged in, their CGPA results are almost similar. It means that whether student-athletes represent the highest or the lowest level of sport participation, they will not differ in academic achievement. The similarities in academic success among student-athletes were

due to their involvement in sports which required the skills of focusing, repetition and memorization, which are very crucial to class learning (Rao et al., 2018; Azli et al., 2020, Diyaolu, 2021). Other than that, participating in sports results in a positive effect to physical and mental health which affect the way student-athletes act and think (Jakiwa et al., 2020; Snedden et al., 2019) as well as social and psychological health that help student-athletes in handling stress, making decisions and interacting with others (Andersen et al., 2019). Moreover, regular participation in sports will also increase the level of biological and psychological maturation (Atan & Kassim, 2019) which is very important in how individuals think and make choices (Malm et al., 2019). In addition, sports involvement may associate to boost self-confidence and increase self-discipline necessary for academic success especially for individuals who are not currently active in sports (Robst & Keil, 2000). The benefits reach far beyond the physical, this translate from active participation that teach skills of memorization (Khamees, 2016) and focused (Foran et al., 2017) which can be helpful in academic growth.

5. Conclusion

In conclusion, the current study has found that student-athletes who represent their country, state, university, club and college in sports did not show a difference in academic success. Participation in sports actually promotes a wide range of social, physical and intellectual skills that lead to better performance in the classroom. As explained by Self-Determination Theory the personality and motivation is typically linked to accomplishment and success aids student-athlete development. Therefore, it implicated that despite being involved as representatives at any level of sport participation during university studies, they would still gain benefits not only in mental, physical and social aspects but also in academic success. As a recommendation for future study, there is a requirement to understand the extent of similarities in the academic success and level of sport participation among student-athletes.

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Appendix 1 Questionnaire via Google Form

TAHAP PENGLIBATAN SUKAN DAN PENCAPAIAN AKADEMIK DALAM KALANGAN PELAJAR UNIVERSITI PERTAHANAN NASIONAL MALAYSIA" *(Level of Sports Participation and Academic Success among National Defence University of Malaysia Students)*

Borang soal selidik ini digunakan untuk mendapatkan maklum balas berkaitan dengan pencapaian sukan dan akademik pelajar. Ia bertujuan untuk menilai kesan penglibatan sukan terhadap pencapaian akademik dalam kalangan pelajar Universiti Pertahanan Nasional Malaysia (UPNM). Oleh itu, saya mengharapkan kerjasama daripada anda untuk menjawab soal selidik ini secara telus dan ikhlas. Segala respon yang anda berikan saya dahului dengan ucapkan terima kasih (*This questionnaire was used to obtain feedback related to students' sports and academic achievement. It aims to assess the impact of sports involvement on academic achievement among students of National Defence University of Malaysia (UPNM). Therefore, I expect cooperation from you to answer this questionnaire transparently and sincerely. All the responses you give me are preceded by a thank you.*)

Soal selidik ini mengandungi Lima (5) bahagian utama, iaitu (*This questionnaire contains 4 sections*);

Bahagian A: Latar Belakang Responden (*Part A: Background of Respondent*)

Bahagian B: Penglibatan Sukan (Umum) (*Part B: General Sport Participation*)

Bahagian C: Penglibatan Sukan (Penyertaan Kejohanan Sukan) (*Part C: Specific Sport participation*)

Bahagian D: Pencapaian Akademik (*Part D: Academic Achievement*)

Bahagian A: Latar Belakang Responden (*Part A: Background of Respondent*)

Arahan: Sila jawab semua soalan pada ruangan yang berkenaan (*Instructions: Please answer all questions*).

1. Jantina (*Gender*)

Lelaki (*Male*)

Perempuan (*Female*)

2. Kategori Pelajar (*Type of Students*)

Kadet (*Cadet*)

PALAPES (PALAPES)

Awam (*Civilian*)

3. Umur (tahun) *Age (Years)*

19

20

21

22

23

24

Other:

4. Tinggi (cm) (*Physical Height*)

5. Berat (kg) (*Body Weight*)

6. Peringkat Pengajian (*Level of Study*)

Asasi (*Foundation*)
Diploma (*Diploma*)
Ijazah (*Degree*)
Master (*Master*)
Ph.d

7. Tahun Pengajian (*Year of Study*)

Tahun 1 (*year 1*)
Tahun 2 (*year 2*)
Tahun 3 (*year 3*)
Tahun 4 (*year 4*)
Tahun 5 (*year 5*)

8. Semester Pengajian (*Study Semester*)

Semester 1
Semester 2
Semester 3
Semester 4
Semester 5
Semester 6
Semester 7
Semester 8
Semester 9
Semester 10

9. Tahun Memulakan Pengajian di UPNM (*Year of becoming as UPNM student*)

2014
2015
2016
2017
2018
2019

Bahagian B: Penglibatan Sukan (Umum)

(*Part B: General Sport Participation*)

Sila nyatakan penglibatan sukan tertinggi anda (Please state your highest sports participation)

10. Anggaran MASA BERSUKAN anda dalam SEHARI? (*Estimation of your minutes of sport participation in a day*)

<30 minit
60 minit
90 minit
120 minit
150 minit
180 minit
>180 minit
Tidak bersukan (*not participated in any sports activity*)

11. Anggaran jumlah hari bersukan anda dalam seminggu? (*Estimation of your days of sport participation in a week*)

1 2 3 4 5 6 7 Tidak berkaitan (*not applicable*)

12. Anggaran MASA LATIHAN SUKAN yang anda peruntukkan dalam SEHARI (latihan khas/pusat untuk kejohanan atau perlawanan sukan)? (*Estimation of your minutes of training in a day for central training*)

<60 minit

91 minit

120 minit

150 minit

180 minit

>180 minit

Tidak berkaitan (*not applicable*)

Other:

13. Anggaran JUMLAH SESI LATIHAN anda dalam SEMINGGU (latihan khas/pusat untuk kejohanan atau perlawanan sukan)? (*Estimation of your number of training sessions in a week for central training*)

1 sesi

2 sesi

3 sesi

4 sesi

5 sesi

6 sesi

7 sesi

> 7 sesi

Tidak berkaitan (*not applicable*)

Other:

Bahagian C: Penglibatan Sukan (Penyertaan Kejohanan Sukan) (*Part C: Specific Sport participation*)

Sila nyatakan penglibatan sukan tertinggi anda (*Please state your highest sports participation*)

14. Nama kejohanan sukan yang pernah anda sertai (semasa anda bergelar pelajar UPNM)? *Name of sports tournament you have participated in (when you were a UPNM student)?*

15. Sila nyatakan sukan yang anda wakili? (*What sport you played?*)

16. Bila (tahun) anda menyertai kejohanan sukan tersebut? (*When you participated in a competition?*)

2014

2015

2016

2017

2018

2019

2020

17. Peringkat kejohanan sukan tersebut? (*Level of tournament*)

- Kolej (*College*)
- Kelab (*Club*)
- Universiti (*University*)
- Negeri (*State*)
- Negara (*National*)
- Other:

18. Pencapaian dalam kejohanan sukan tersebut? (*Achievement in the competition?*)

- Johan (*Champion*)
- Naib Johan (*1st runner up*)
- Ketiga (*2nd runner up*)
- Sepuluh akhir (*semi-final*)
- Suku akhir (*quarter final*)
- Pusingan kedua (*second round*)
- Peringkat Kumpulan (*group stage*)
- Other:

Bahagian D: Pencapaian Akademik (*Part D: Academic Achievement*)

*PNGK (Purata Nilai Gred Keseluruhan) *CGPA (*Cumulative Grade Point Average*)

Arahan: Sila jawab setiap soalan yang dikemukakan (*Instructions: Please answer all questions*)

19. PNGK* (CGPA) semasa anda. (*Your CGPA*)

- > 3.68
- 3.34 - 3.67
- 3.01 - 3.33
- 2.68 - 3.00
- 2.34 - 2.67
- 2.01 - 2.33
- 1.68 - 2.00
- 1.34 - 1.67
- 1.01 - 1.33
- <1.00

20. Anggaran MASA DALAM SEHARI yang diperuntukkan untuk PEMBELAJARAN KENDIRI (selain daripada kelas/ kuliah)? (*Estimated TIME IN A DAY allocated for SELF - LEARNING (other than classes/ lectures)?*)

- < 30 minit
- 60 minit
- 90 minit
- 120 minit
- 150 minit
- 180 minit
- > 180 minit
- Tidak berkaitan (*not applicable*)

Sekian dan terima kasih di atas kerjasama anda semua. (*Thank you for cooperation*).