

EXTRACURRICULAR ACTIVITIES AT SCHOOL

The relationship between specialisation in subject areas and exit level and the extracurricular activities of high school students

A Case Study at State College Area High School.
State College, Pennsylvania (U.S.A)

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1. Introduction

Each country has a unique educational system in place. The tiered secondary education system, for example, is idiosyncratic to the Netherlands and creates uniform levels across all subjects. Students are grouped according academic ability at the end of their primary education. This contrasts to the system in America where all students have or should have equal access to education, and grouping of academic ability occurs on an individual subject basis. This feature of each education system is only one aspect; it illustrates how no two systems are the same.

Another way in which the American and Dutch system differs is by the inclusion or lack of extracurricular activities in school. Extracurricular activities are something that have only recently been introduced to Dutch schools on a very small scale. The bulk of extracurricular activities are arranged outside of school for Dutch students. After the regular school day, many Dutch children attend music or sport activities at different clubs in their local area. In sport activities students will represent their club rather than their school, as sport mostly does not take place at school beyond the physical education class. In America, on the other hand, schools offer a wide range of extracurricular activities to appeal to a wide range of students.

Education is constantly changing with the aim of improving curricula and programmes offered to students. If one education system had achieved perfection, all others would have followed, so it can be assumed that each system has its merits as well as its flaws, and each system can be improved by evaluating its own (im)perfections and those of others. In this research extracurricular activities in secondary education forms the core focus.

1.1. Theoretical framework

The term ‘extracurricular activities’ refers to any activities that take place outside of the regular (compulsory) school curriculum. “The activities are voluntary, and students do not receive grades for academic credit for them” (Holloway, 2000, 87). These activities are offered outside of school hours, but within the school setting. Extracurricular activities not associated with school are not included within this definition.

Extracurricular activities are offered at most schools in the United States and can consist of a wide range of activities that do not form a part of the regular school curriculum. Most schools allow a free choice for student involvement in these activities, but “many private schools make involvement in one or more extracurricular activities a mandatory requirement for their students; believing that such a mandate helps to create a more ‘well-rounded’ student” (Stoltzfus, 2007, 4). It has indeed been found that private schools such as Cedar Valley Christian School in Iowa

include statements about extracurricular activities, for example “Students are strongly encouraged to participate”. This seems to contradict the definition of extra-curricular activities being voluntary, but can be interpreted as an obligation for all students to participate in an extra-curricular activity of their choice. It is clear that the schools promote participation in these activities due to the merits involved.

Multiple studies have been conducted into the implications of extracurricular involvement. These studies mostly look at the nature of the activity, the background of the student to establish the effect of participation in activities offered. Outcomes of studies have indicated that involvement in these activities can be beneficial towards the motivation of student, college education, grade levels, personal and interpersonal skills amongst others. A number of these studies will be addressed to provide an overview of the impact of extracurricular activities on those who participate.

Research has focussed on the influence of extracurricular activities on academic performance. McCarthy highlights that “Those [students] who participate in [extracurricular] activities have significantly higher GPA’s and significantly lower absenteeism. Although these results are consistent across genders, ethnicities, and socio-economic levels, the results show that differences do exist” (McCarthy, 2000, 411). The GPA of a student refers to their average grade, which is indicated to increase when participating in extracurricular activities. In addition to the higher grades, those student who participate in regular, organised activities, are found to be absent from school less frequently than those students who do not participate. Naturally, those students who attend school more frequently are likely to attain higher grades, which would result in a higher GPA. Attendance and grades are evidently positively influenced by participation in extracurricular activities.

The increased attendance associated with participation in extracurricular activities highlights the notion of motivation experienced by those students who participate in activities. Studies comparing students who only attend academic requirements in school and those who also participate in extracurricular activities highlight that, “youths in school reported low intrinsic motivation, difficulty concentrating, and high rates of boredom, whereas youths in structured voluntary activities had high intrinsic motivation and reported that concentration was easier and that they experienced high challenge” (Fredricks, 2006, 712). Intrinsic motivation can thus be seen to increase for students who participate in extracurricular activities.

Besides motivation, attendance and academic achievement, “extracurricular activities serve a large purpose in the [...] social, physical, and cognitive development of children” (Fujita, 10). These general benefits are confined in further studies looking at the benefit for specific groups of students. For example, “involvement in extracurricular activities may support the at-risk student by maintaining, enhancing, and strengthening the student-school connection” (Holloway, 2000,

87). This positive connection may again enhance attendance and motivation as well as the general benefits highlighted by Fujita. Due to the voluntary nature of participation in extracurricular activities, the connection to the school is also positive (Holloway, 2000, 87).

There are also studies that highlight the negative effects of extracurricular activities. Both positive and negative effects of participation are dependent on factors such as the nature of the activity and the background of the student involved. Studies have shown that some athletic activities can coincide with increased alcohol use. Informal activities, that is, those activities not set up or supervised by an adult, or controlled by the school, can lead to problem behaviour by the youths involved in terms of undesirable social norms (Fredricks, 2006, 698). The undesirable social norms remain undefined, but it is evident that the effect of participating in unsupervised and disorganised activities can be negative.

It could also be considered that the participation in extracurricular activities takes time away from students that could be used to fulfil academic requirements. This could be seen as a limitation to participation in extracurricular activities. In “The Extracurricular Advantage” Reeves (2008) highlights the idea that participation in extracurricular activities does not create academic disadvantage, and that these activities can be seen to improve academic performance of students. He continues to argue that removal from participation in these activities is often used as a punishment for poor academic performance, but should instead be encouraged to those students who are struggling academically because of the merits of these activities.

Increased motivation and exit level form just two of the advantages of extracurricular activities. Examples of additional benefits of extracurricular activities include life lessons, influences on self esteem, group dynamics and social aspects. These effects of student participation in extracurricular activities have been researched from multiple points of view. Although social benefits related to participation are numerous, the stress in this research will be put on the academic merits. The focus will be on the link between the participation in extracurricular activities, subject choices and exit level of the student.

As each country strives for excellence within its educational system, the Dutch government is concerned about the current status and future needs of the education system too. Representative Hamer of the lower house in the Dutch government requested the Dutch minister for education, culture and science, Plasterk, to create a coherent report on the status of education at the end of 2008. In his letter to the secretary general, Plasterk writes that education should encourage all students to achieve the maximum of their individual capacities which can only be achieved if schools are stimulating environments. It becomes evident that there are aspects of secondary education that require improvement according to Plasterk, and the question that needs to be posed is how improvement can be achieved. Plasterk states that he is willing to invest in the

fundamental aspects of education to ensure that more people leave secondary education with a qualification.

Plasterk highlights some of the concerns for education in the Netherlands, and further issues have been highlighted or extended in other studies. One of the areas of dissatisfaction addressed by Plasterk and highlighted by *De Volkskrant* (Dirks, 2008) is that Dutch students have to choose their level of secondary education very early within their academic career. Students choose their high school exit level around the age of twelve, and thereby they implicitly choose their postsecondary school options very early in their academic careers. The academic ability of some students is not noticed, and these students will only reach their full academic potential if they are highly motivated to reach the highest level via a detour. Furthermore education in the Netherlands does not encourage Dutch students to strive for academic excellence. *Het Parool* (2008) highlights this by explaining that the current set up of exams does not encourage students to achieve high academic results, because they can pass the exam with a number of failing grades.

One of the ways to improve education, as suggested by Plasterk, is to improve the quality of exams in secondary education to ensure the desired level is achieved, and to encourage students to strive for increased levels of academic excellence (Plasterk, 2008, 5). More stringent exams, however, will not yield education of higher quality, but will instead demand the quality of education be improved to enable students to complete these exams successfully. The method used to improve education needs to be established.

As the Dutch, and European, post-secondary education system starts to take on a more American model with the inclusion of the bachelor-master system and opportunities for students to broaden their study with a minor, it can be expected that the expectations for high school graduates change as well. Plasterk has highlighted that exams should become more stringent and that high school students have to be encouraged to consider their options, both in secondary school and post-secondary education, more carefully. One of the ways in which Dutch schools could change and in turn change the attitude and academic setting of students could be through the introduction of extracurricular activities.

1.2. Research Problem

Studies have indicated strong positive effects of extracurricular activities, ranging from academic results to psychological benefits, and from strong interpersonal skills to increased motivation within the academic setting. One of the merits that has also been highlighted is the idea that there is a positive correlation between student involvement in extracurricular activities and college attendance (Fujita, 2006, 2). This benefit, combined with many of those aforementioned, gives ground for the suggestion to incorporate extracurricular activities into educational programmes. What has not been addressed in previous research, however, is what the influence of a specific

activity is on the exit level, or further educational aspirations of students. The existence of a relationship between subject choice and selection of extracurricular activities has also not been investigated. These two aspects are important to consider when discussing the influence and implementation of extracurricular activities. The question that will be addressed in this research is therefore: *How does the specialisation in subject area and the exit level of high school students relate to the participation of students in extracurricular activities?*

To answer this question several sub questions need to be addressed:

- a. To what extent does the study group participate in extracurricular activities?
- b. How do the general characteristics of the study group relate to participation in extracurricular activities?
- c. How does motivation for extracurricular activities affect participation?
- d. How does the exit level of high school students relate to participation in extracurricular activities?
- e. How is the subject of interest related to participation in extracurricular activities?
- f. How is the specialisation in subject area related to participation in extracurricular activities?

1.3. Hypotheses

When choosing to participate in the wide choice of extracurricular activities, it can be expected that students consciously choose the activity based on personal and/or academic interest. Students may choose to match extracurricular activities to the subjects chosen within their curriculum, or use the opportunity to pursue interests not fulfilled within their academic choices. Those students who plan to attend college or university will be likely to use the extracurricular activities by pursuing those activities that do not match their curriculum choices to create a broad personal profile that will benefit their college application.

Previous research has shown that there is a positive link between the number of extracurricular activities that students participate in and the level of education the student will achieve (Reeves). Specialisation in a subject of interest is expected to be associated with higher education, because colleges encourage specialisation in subjects.

Due to underlying socioeconomic factors that influence the choice of extracurricular activities, certain types of extracurricular activities can be expected to be associated with certain types of exit level, such as sports with jobs and business activities with higher education.

The type of motivation for participation in extracurricular activities is expected to be correlated with higher education, because those with intrinsic motivation tend to achieve more than those with external motivation. In general, the more highly motivated students are expected to participate in more extracurricular activities.

More general issues are expected to be shown according to earlier findings in literature; such as girls participate in a larger number of extracurricular activities than boys.

The hypotheses belonging to the aforementioned research questions and sub questions are:

- a. Most students participate in at least one activity.
- b. Girls participate in a larger number of extracurricular activities than boys.
- c. Students participate in extracurricular activities because of self interest rather than for their future education.
- d. Students who participate in more and more varied extracurricular activities have a higher exit level.
- e. Most students participate in extracurricular activities similar to their subject of interest.
- f. Students who specialise during their high school education diversify their curriculum by participating in extracurricular activities different from their subject of interest and expect to achieve a higher exit level.

2. Research Methods

2.1. Study cohort

This research compares high school students participating in extracurricular activities on the basis of number and types of activities they participate in, specialisation in subject area and exit level of high school. The research group consists of students in the State College Area High School (SCAHS) during the academic year of 2008-2009. All students in grade 10 through 12 were asked to fill out an online questionnaire by an email containing a link, after parental consent had been obtained.

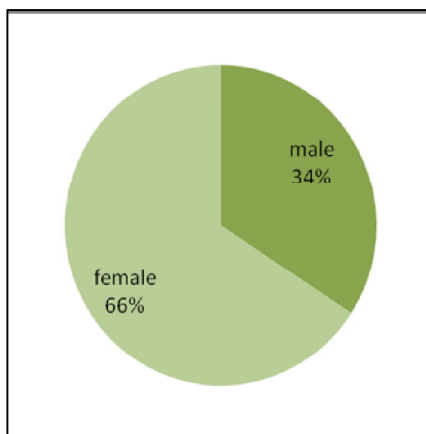
2.2. Design

This study is constructivist in that it aims to develop a possible solution to a problem in the Netherlands. However, this study is mostly focused on analysing data comparing certain student groups and can therefore be classified as a cross-sectional observational study. The instrument used is an online questionnaire, for which the link is distributed through an email to the entire student population. This study and questionnaire had to be approved by the BITEP, the school district (SCASD) and the PSU ethical review board (IRB). Before the questionnaire was distributed, parents and guardians had given informed consent for their student to participate in our research.

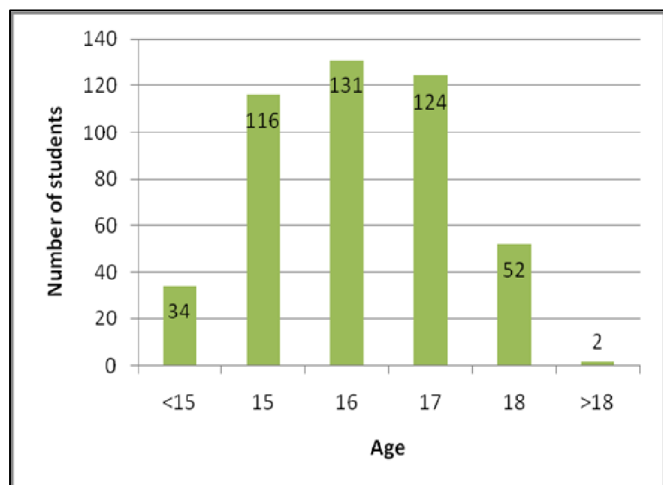
2.3. Study population

The research group is influenced by factors such as lack of parental consent and parents' lack of email access. This resulted in approximately 50 students being explicitly excluded from the study. After selection by student's lack of email access and the interests of children, 468 responses to the questionnaire were received between April 17, 2009 and April 27, 2009. The 9 respondents who did not answer the general questions on gender and age were excluded from the analysis.

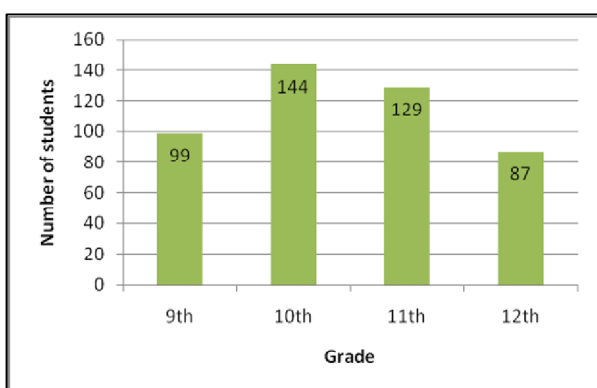
Therefore, the complete study population amounted to 459 students, of which 157 (34.2%) are male and 302 (65.8%) are female [Graph 1]. Median age of the participants is 16 years [Graph 2] and their median grade is 10th [Graph 3]. Most participants (83.7%) are of Caucasian descent, 8.5% is Asian, 2.4% African American, 2.0% Hispanic and 3.5% of participants answered Other [Graph 4].



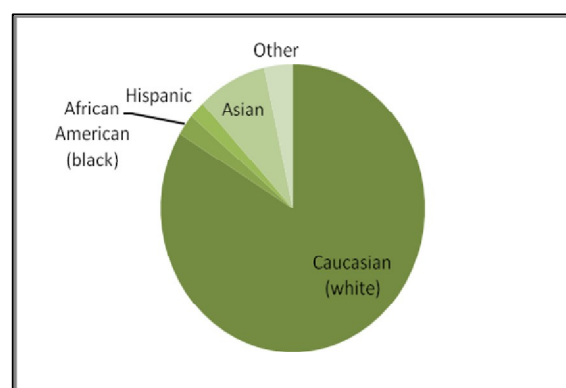
Graph 1: Gender of students



Graph 2: Age of students



Graph 3: Grade of students



Graph 4: Ethnicity of students

The descent of the study population seems to be representative of the study cohort as illustrated in the Special Education Plan for SCASD (“School Report Card 2007-2008”, 3).

2.4. Measurements

In order to answer the research question “*How does the specialisation in subject area and the exit level of high school students relate to student’s participation in extracurricular activities?*” several issues must be addressed.

General questions on gender, age, current grade level and ethnicity allow the researchers to compare the study population to the study cohort and look at the possibility of generalising the results to other cohorts.

First, the relation between the exit level of high school students and their participation in extracurricular activities (ECA) will be studied. Not just the participation itself, but also the reasons for participation in, number and nature of extracurricular activities could be related to the high school exit level.

The participation in extracurricular activities is measured by a question asking for the number of activities regularly participated in. The specific extracurricular activities were grouped into categories, from which the participants can choose multiple options to indicate which types they participate in. The motivation for participation in extracurricular activities is measured by a series of questions asking for the amount of internal versus external motivation, worded differently to be more appropriate for students. The range of internal through external motivation varies from "because I enjoy it" to "my parents made me", based on a Likert scale.

The exit level of high school, or postsecondary option, is measured indirectly by a question asking for the student’s plans after high school, giving them diverse - and partially unranked - options such as college, jobs and military services.

Second, the link between specialisation in subject area and student’s participation in extracurricular activities will be reviewed. Again, the reasons for participation in, number of, and nature of the extracurricular activities could be related to specialisation in subject area. The specialisation in subject area is measured by asking for the percentage of courses followed within the student's area of interest.

Also, matching or conscious absence of matching between extracurricular activities and subject of interest by students will be reviewed. A question on whether extracurricular activities match with the participants’ curriculum is asked to measure the absence of matching.

The questionnaire was piloted in the parent group during the informed consent process. This resulted in 155 responses that included some very useful tips. Unfortunately, the internal validity could not be measured during the piloting phase, because recruitment of the pilot group within the research group was not permitted.

The external validity was measured by taking gender and ethnicity as indicator variables; in section 2.3 the research group and the study group are compared. In this research the cut-off for significance is $p=0.05$.

2.5. Data analysis

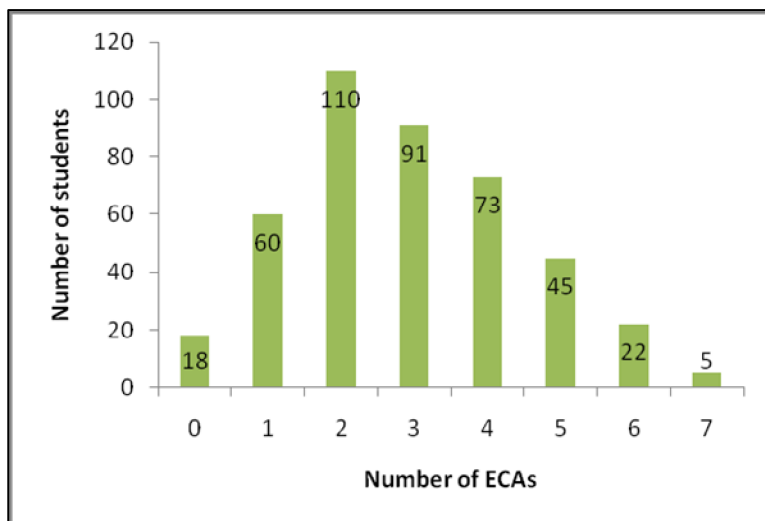
The data is analyzed by simple descriptive and comparative analysis (SPSS 16.0); Chi-square, Mann-Whitney and Kruskal Wallis tests were employed.

3. Results

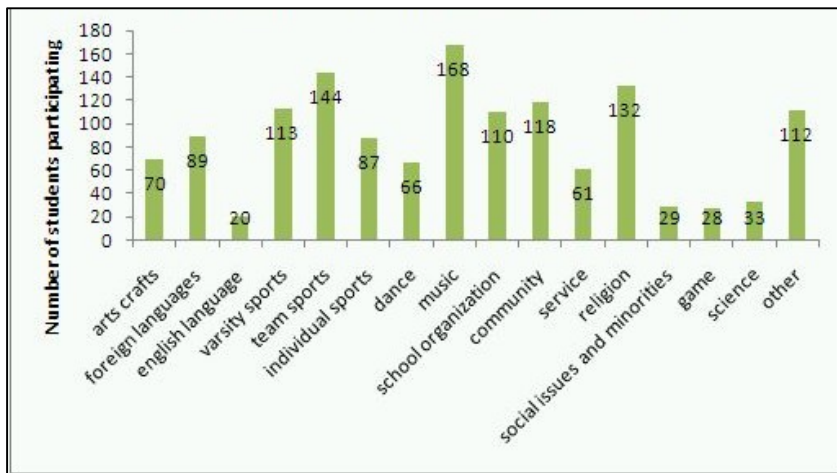
The following results have been collected. Full data (SPSS syntax) is available on request. The results are discussed in order of the aforementioned research questions.

3.1. Number and nature of extracurricular activity participation

Students participate in a mean of 2.9 extracurricular activities [Graph 5]. Most students participate in 2 or more extracurricular activities. The most favourite extracurricular activity [Graph 6] is music, followed by team sports and religion as measured by number of students participating.



Graph 5: Number of ECAs that students participate in



Graph 6: Participation in different ECAs

The association between the different extracurricular activities was tested as well; participation in some extracurricular activities is strongly associated with participation in another [Figure 1, Table 1].

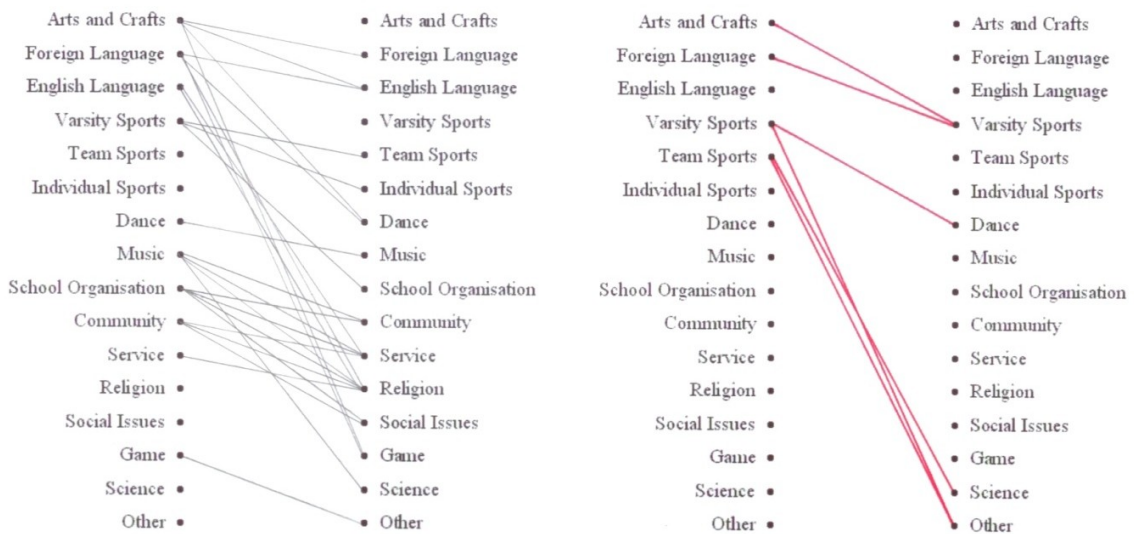


Figure 1: Relationships between ECAs. Red lines indicate a significant inverse relationship. Grey lines indicate a significant positive relationship. Absence of a line indicates that no significant relationship was shown.

	Arts and crafts	Foreign Language	English language	Varsity sports	Team sports	Individual sports	Dance	Music	School Organisation	Community	Service	Religion	Social issues	Game	Science	Other
Arts and crafts	0,002 (+)	0,012 (+)	0,013 (-)	0,383	0,279	0,028 (+)	0,086	0,710	0,234	0,618	0,592	0,169	0,010 (+)	0,136	0,074	
Foreign language		0,000 (+)	0,030 (-)	0,784	0,213	0,015 (+)	0,115	0,928	0,167	0,684	0,001 (+)	0,855	0,024 (+)	0,100	0,637	
English language			0,307	0,721	0,903	0,166	0,203	0,912	0,135	0,003 (+)	0,032 (+)	0,489	0,834	0,167	0,551	
Varsity Sports				0,000 (+)	0,036 (+)	0,025 (-)	0,450	0,044 (+)	0,327	0,204	0,120	0,203	0,190	0,084	0,031 (-)	
Team Sports					0,000 (+)	0,177	0,233	0,722	0,169	0,353	0,214	0,432	0,453	0,037 (-)	0,032 (-)	
Individual Sports						0,608	0,775	0,247	0,656	0,614	0,295	0,808	0,730	0,906	0,733	
Dance							0,000 (+)	0,955	0,220	0,062	0,140	0,650	0,568	0,246	0,129	
Music								0,079	0,009 (+)	0,013 (+)	0,000 (+)	0,298	0,920	0,026 (+)	0,999	
School Organisation									0,001 (+)	0,001 (+)	0,006 (+)	0,000 (+)	0,746	0,376	0,189	
Community										0,000 (+)	0,018 (+)	0,120	0,593	0,062	0,295	
Service											0,000 (+)	0,000 (+)	0,323	0,164	0,721	
Religion												0,780	0,650	0,839	0,136	
Social Issues													0,074	0,950	0,631	
Game														0,134	0,005 (+)	
Science															0,097	
Other																

Table 1: Relationships between ECAs. The significance levels of the relationships found are indicated. When below $p=0.05$ the direction of the associations is shown; a + sign indicates a positive correlation whereas a - sign indicates an inverse correlation.

Differences across the extracurricular activities in the number of extracurricular activities that was participated in were researched. Participation in almost all extracurricular activities (except game) is significantly positively associated with number of extracurricular activities participated in [Table 2].

Extracurricular activity	Mean rank		Significance
	not participating	participating	
arts & crafts	202	269	0,000
foreign languages	198	273	0,000
English language	209	305	0,001
varsity sports	203	241	0,004
team sports	200	240	0,001
individual sports	202	256	0,000
dance	205	259	0,001
music	172	284	0,000
school organisation	191	283	0,000
community	187	285	0,000
service	201	285	0,000
religion	183	286	0,000

Extracurricular activity	Mean rank		Significance
	not participating	participating	
social issues and minorities	208	280	0,003
game	210	250	0,091
science	208	269	0,007
other	204	239	0,009

Table 2: Relationship between participation in extracurricular activity and number of extracurricular activity participated in. The table shows the rank between students participating and not participating in certain ECAs, The significance indicates whether there is a significant difference.

Only gender is a significant predictor for the number of extracurricular activities that is participated in [Table 3], not ethnicity, grade or age. Girls ($\mu=3.1$) participate in significantly more ECAs than boys ($\mu=2.6$).

Statistic	male	female	Significance
Mean rank	189	225	0,003
Mean number of ECAs participated in	2,63	3,07	

Table 3: Relationship between gender and number of extracurricular activity participated in. The significance indicates whether there is a significant difference between the two groups.

There are also significant gender differences [data not shown] in the nature of extracurricular activities participation. Arts & crafts attract more girls, team sports attract more boys, dance attracts more girls, community attracts more girls, religion attracts more girls and game attracts more boys. Due to low counts, no significant ethnicity differences [data not shown] in participation were found, however some trends were shown: foreign languages, team sports, and science attract more non-white students. There are significant age differences [data not shown] in participation in different extracurricular activities. Foreign languages attract more 15-16 year olds, community attracts more 16-18 year olds and service attracts more 17-18 year olds. Also, there are significant grade differences in participation [data not shown]. Foreign languages more attracts 9th-10th graders, varsity sports, school organisation and community attract less 9th graders and service attracts more 11th-12th graders.

3.2.Motivation for participation in extracurricular activities

Only three motivation indicators were significantly associated with the number of extracurricular activities that students participated in: ‘own interest/just for fun’, ‘for my future education’ and ‘to support my grades in current courses’ [Table 4].

Motivation indicator	Significance
own interest / just for fun	0,000
because of friends / to socialize	0,154
for my future education	0,000
to support my grades in current courses	0,025
my parents / teachers told me to	0,876

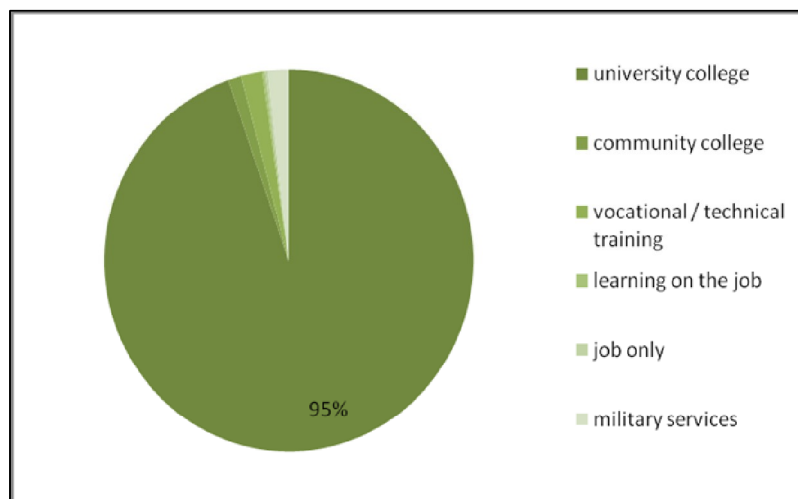
Table 4: Relationship between motivation indicators and number of extracurricular activity participated in. The significance indicates whether there is a significant association between the number of ECAs and the different motivation indicators.

The relationships between each extracurricular activity and motivation indicator were investigated separately [data not shown] to see whether there are differences in motivation for the different extracurricular activities. 'Own interest / just for fun' was significantly positively associated with the extracurricular activities individual sports and social issues and minorities. The extracurricular activities foreign languages, community, service, religion, game, science and other were significantly positively associated with the motivation indicator 'for my future education'. The motivation indicator 'to support my grades in current courses' is significantly positively associated with the extracurricular activities foreign languages, community and religion.

No significant gender, ethnicity, grade or age differences were shown in the motivation indicators [data not shown].

3.3. Postsecondary education

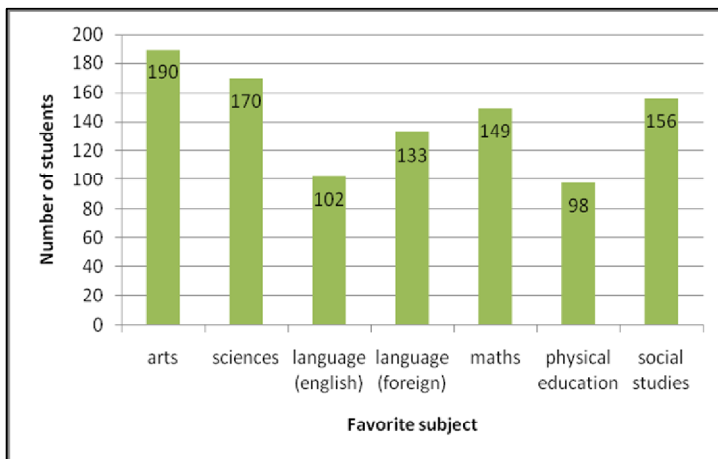
Most students (95%) expect to go to University College [Graph 7]. None of the other groups is large enough to analyse separately or combined.



Graph 7: Postsecondary education

3.4. Favourite subjects as chosen by students

Students indicated different favourite subjects. Arts, sciences and social studies were indicated most, respectively. There does not seem to be an explicit major preference within this school, with none of the subjects of interest attracting more than half of the students [Graph 8].



Graph 8: Favourite subject as indicated by students

Maths and sciences are positively related to each other, but negative to all other subjects of interest except for physical education. Arts and the languages are positively related and so are the languages and social studies [Figure 2].

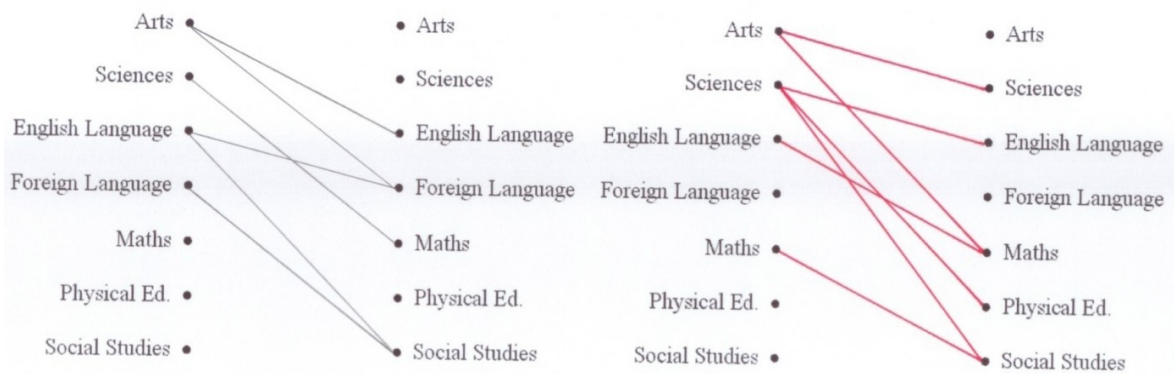


Figure 2: Relationship between subjects of interest. Grey lines indicate a significant positive relationship and red lines indicate a significant inverse relationship. The absence of a line shows that no significant relationship was shown.

	Arts	Sciences	English Language	Foreign Language	Maths	Physical Education	Social Studies
Arts		0,009 (-)	0,001 (+)	0,000 (+)	0,002 (-)	0,129	0,908
Sciences			0,023 (-)	0,956	0,000 (+)	0,008 (-)	0,016 (-)
English Language				0,000 (+)	0,008 (-)	0,113	0,014 (+)
Foreign Language					0,359	0,880	0,010 (+)
Maths						0,308	0,004 (-)
Physical Education							0,868
Social Studies							

Table 5: Relationships between favourite subjects. The significance levels of the relationships found are indicated. When below $p=0.05$ the direction of the associations is shown; a + sign indicates a positive correlation whereas a - sign indicates an inverse correlation.

A significant difference in participation in extracurricular activities across favourite subjects is shown [Table 6]. Students who choose arts and foreign languages as their favourite subjects participate in significantly more extracurricular activities than students with other subjects of interest.

favourite subject	mean rank		significance
	No	yes	
Arts	203	226	0,046
Sciences	208	220	0,331
language (English)	207	233	0,059
language (foreign)	199	246	0,000
maths	216	205	0,376
physical education	214	206	0,543
social studies	213	212	0,969

Table 6: Rank correlation between favourite subject and number of ECA participated in. The table shows whether there is a significant difference in number of ECAs that students participate in depending on their favourite subject.

Significant associations between subject of interest and gender were found [data not shown]. Girls choose arts more often; boys choose English language and foreign languages less often; and girls choose maths less often. Some significant associations between subject of interest and age were found [data not shown]. Science is chosen more often by 16-17 year olds and 16 year olds

choose English language less often as a favourite subject. No relationship was found between ethnicity or grade and subject of interest [data not shown].

Analysis of data on extracurricular activity participation matched with the subject of interest shows that there are some significant associations [Figure 3]

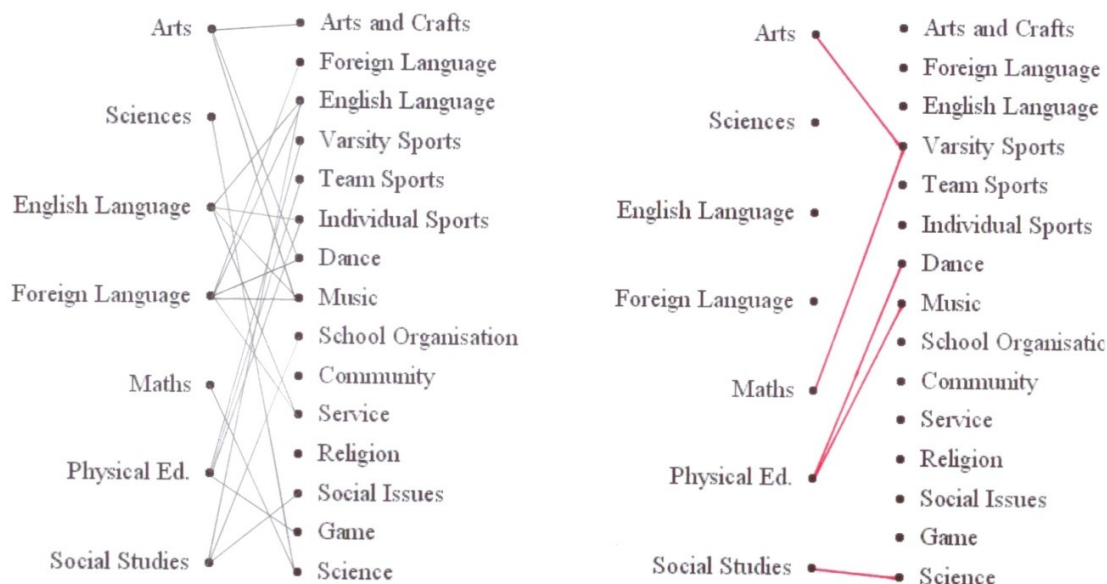


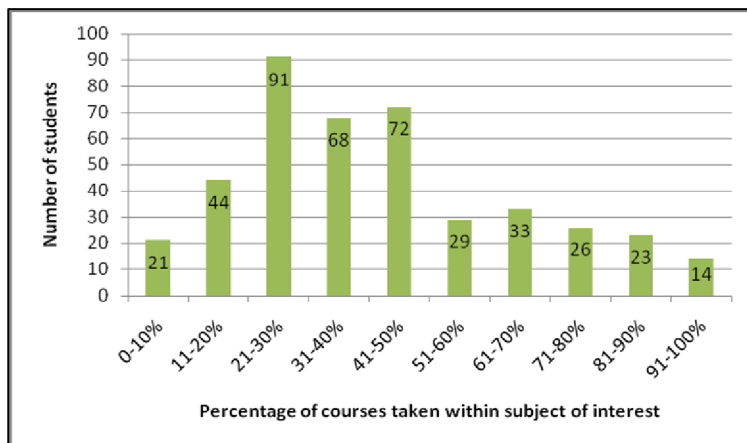
Figure 3: Relationships between favourite subjects and ECAs. Grey lines indicate a positive relationship, red lines an inverse relationship. Absence of a line means that no significant relationship was shown.

	Arts	Sciences	English Language	Foreign Language	Maths	Physical Education	Social Studies
Arts and crafts	0,000 (+)	0,984	0,282	0,177	0,113	0,060	0,828
Foreign language	0,086	0,618	0,077	0,000 (+)	0,978	0,774	0,851
English language	0,207	0,505	0,000 (+)	0,009 (+)	0,224	0,479	0,042 (+)
Varsity Sports	0,054	0,797	0,772	0,371	0,054 (-)	0,000 (+)	0,411
Team Sports	0,177	0,238	0,809	0,295	0,259	0,000 (+)	0,389
Individual Sports	0,806	0,584	0,056	0,128	0,847	0,001 (+)	0,541
Dance	0,000 (+)	0,878	0,831	0,000 (+)	0,123	0,048 (-)	0,688
Music	0,000 (+)	0,078	0,024 (+)	0,016 (+)	0,762	0,010 (-)	0,822
School Organisation	0,918	0,867	0,501	0,786	0,442	0,507	0,014 (+)
Community	0,537	0,342	0,475	0,066	0,699	0,638	0,981
Service	0,795	0,866	0,014 (+)	0,005 (+)	0,519	0,310	0,126
Religion	0,080	0,981	0,160	0,394	0,488	0,423	0,804
Social Issues	0,999	0,137	0,473	0,801	0,562	0,397	0,037 (+)
Game	0,340	0,173	0,917	0,703	0,970	0,017 (+)	0,832
Science	0,809	0,000 (+)	0,147	0,156	0,000 (+)	0,074	0,047 (-)
Other	0,422	0,142	0,416	0,276	0,190	0,670	0,482

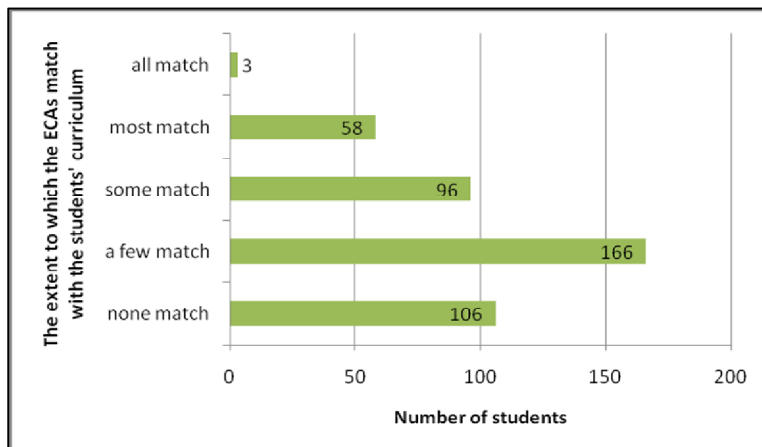
Table 7: Relationships between favourite subjects and ECAs. The significance levels of the relationships found are indicated. When below $p=0.05$ the direction of the associations is shown; a + sign indicates a positive correlation whereas a - sign indicates an inverse correlation.

3.5.Specialisation as measured by courses taken within subject and matching of curriculum with extracurricular activities

Most students do not have a very explicit subject of interest, with only about 30% of courses taken within their subject of interest [Graph 9]. The questions 'courses taken within subject of interest' and 'courses taken outside of subject of interest' are significantly negatively correlated [data not shown]. Also, most students indicate that less than half of their extracurricular activities match with their curriculum [Graph 10].



Graph 9: Percentage of courses taken within subject of interest as students have indicated



Graph 10: Matching of ECAs with curriculum as indicated by students

Students who indicate that more extracurricular activities match to their curriculum take significantly more courses within their curriculum [Table 8].

To what extent do your extracurricular activities match with your curriculum?	N	Mean Rank
none match	102	172,00
a few match	162	197,37
some match	96	235,19
most match	57	272,43
all match	3	261,67
Total	420	
Asymptotic significance	0,000	

Table 8: Rank correlation between matching of ECAs and courses taken within curriculum. The $p < 0,05$ indicates that the positive correlation between the mean rank of number of courses taken within curriculum and the matching of this curriculum to the ECAs is significant.

A significant association between number of extracurricular activities and specialisation was found. Most students take only about 30% of courses within their subject of interest, and about 70% outside. However, students who take more courses within their subject of interest (about 60%) and less outside (about 30%), participate in significantly more extracurricular activities [Table 9]. Most students indicate that few extracurricular activities match to their curriculum, but those students who indicate that more match participate in significantly more extracurricular activities [Table 10].

What approximate percentage of courses did you take within your subject of interest in your high school career when this semester ends?	N	Mean Rank
0-10%	20	126,33
11-20%	42	171,25
21-30%	88	207,58
31-40%	65	205,65
41-50%	71	205,87
51-60%	29	223,31
61-70%	32	246,72
71-80%	25	203,90
81-90%	21	207,14
91-100%	10	161,80
Total	403	
Asymptotic significance	0,022	

Table 9: Rank correlation between courses taken within subject and number of extracurricular activities participated in. The $p < 0,05$ shows that the relationship between the percentage of courses within subject and the mean rank of ECAs participated in is significant. For 61-70% this rank is highest, which means that students within this group participated in most ECAs.

To what extent do your extracurricular activities match with your curriculum?	N	Mean Rank
none match	103	123,32
a few match	161	222,20
some match	91	251,49
most match	54	241,40
all match	2	134,50
Total	411	
Asymptotic significance	0,000	

Table 10: Rank correlation between matching of extracurricular activities and number of extracurricular activities participated in. The $p < 0,05$ shows that the relationship between the mean rank of ECAs participated in and the matching of those ECAs to the students' curriculum is significant. For 'some match' this mean rank is highest, which means that students within this group participated in most ECAs.

A significant relationship between subject of interest and specialisation was found [data not shown]. Students who choose science, English languages, foreign languages, maths or social studies as a favourite subject take significantly more courses within their favourite subject and significantly less outside of their favourite subject as opposed to arts and physical education.

Significant relationships between specific extracurricular activities and specialisation were observed [data not shown]. Students who participate in arts & crafts, foreign languages, school organisation, community, service and other extracurricular activities take more courses within their favourite subject. Students who do not participate in the extracurricular activities foreign languages and school organisation take a higher percentage of courses outside of their favourite subject. Students who participate in the extracurricular activities foreign languages, English language, music, school organisation, community, service, religion, science and other believe that their extracurricular activities are more matched to their curriculum.

The motivation indicators for extracurricular participation were analysed separately for each subject of interest. The 'own interest/just for fun' indicator was significantly associated with foreign languages [Table 11]. No significant relationship was found between the 'to support my grades in current courses' and 'for my future education' motivation indicators and the subjects of interest.

Language (foreign)	N	Mean Rank
no	304	211,84
yes	133	235,36
Asymptotic significance	0,049	

Table 11: Rank correlation for foreign language as a favourite subject versus own interest motivation indicator. The table shows that there is a significant difference between students who do and do not participate in the ECA foreign languages in their 'own interest/just for fun' indicator.

Only the 'to support my grades' motivation indicator is significantly positively associated with courses taken within subject of interest [Table 12].

What approximate percentage of courses did you take within your subject of interest in your high school career when this semester ends?	N	Mean rank
0-10%	19	177,32
11-20%	41	199,17
21-30%	88	170,46
31-40%	66	212,67
41-50%	71	209,26
51-60%	29	243,86
61-70%	33	204,20
71-80%	26	226,25
81-90%	22	234,02
91-100%	14	255,29
Total	409	
Asymptotic significance		0,013

Table 12: Rank correlation for motivation indicator 'to support my grades in current courses' and courses taken within subject of interest. This table shows that there is a significant positive correlation between the motivation indicator and percentage of courses within subject.

Both the 'for my future education' and the 'to support my grades in current courses' motivation indicators are significantly associated with the matching of extracurricular activities to the curriculum [Table 13]. This indicates that kids who say that their extracurricular activities match better with their curriculum score higher on these motivation indicators.

	To what extent do your extracurricular activities match with your curriculum?	N	Mean Rank
For my future education	none match	103	155,02
	a few match	163	204,06
	some match	93	243,31
	most match	55	261,22
	all match	3	310,00
	Total	417	
	Significance		0,000
To support my grades in current courses	none match	101	170,32
	a few match	164	198,73
	some match	94	241,61
	most match	56	249,30
	all match	3	368,17
	Total	418	
	Significance		0,000

Table 13: Rank correlation of matching of extracurricular activities to curriculum vs. motivation indicators. This table shows that there are significant positive correlations between the motivation indicators and the matching of ECAs to curriculum.

No significant associations between the specialisation variables and gender, ethnicity, age or grade were found [data not shown].

4. Conclusion & Discussion

4.1. Discussion of results

The results will be discussed in order of the research sub-questions, mentioned in section 1.2.

a. To what extent does the study group participate in extracurricular activities?

The extracurricular activities team sports, music and religion are most popular amongst the SCASD students who participated in this research. Participation in music and religion are highly correlated, whereas students who participate in team sports belong to a different group of students who dislike science and other extracurricular activities.

Participation in game has a negative impact on the total number of extracurricular activities that students participate in, but all other extracurricular activities have a positive correlation with the number of extracurricular activities that is participated in.

The data show that the average student participates in 2.9 activities, which supports the hypothesis.

b. How do the general characteristics of the study group relate to participation in extracurricular activities?

The gender differentiation in extracurricular activity participation is as can be expected (McCarthy, 412); girls participate more, which confirms the hypothesis. The age and grade differentiation in extracurricular activity participation can be explained by several factors. In 9th and 10th grade (15-16 year olds) foreign language as an extracurricular activity is useful to practice the foreign language in their curriculum. This has been shown by the positive correlation of the motivation indicator ‘to support my grades in current courses’ with foreign languages. The extracurricular activities varsity sports, school organisation and community attract less 9th graders because the children have to be in ‘less important’ or preparatory extracurricular activities before they can join the school’s varsity teams or the school’s organisation.

c. How does motivation for extracurricular activities affect participation?

Students are very much aware of the effect of participation in extracurricular activities on their future education, and participate in more extracurricular activities for this reason than because of ‘own interest / just for fun’, which refutes the hypothesis. The motivation ‘to support my grades in current courses’ is also important for the students.

d. How does the exit level of high school students relate to participation in extracurricular activities?

In the Results section it is clear that not enough variety in data was available to answer this sub-question.

e. How is the subject of interest related to participation in extracurricular activities?

The research group shows a great diversity in favourite subjects, not one subject is picked much more or less than the others. Maths and sciences as favourite subjects are highly positively correlated, but negatively associated with all other favourite subjects except for physical education. The extracurricular activities are associated with the favourite subjects in such a way that the data from figure 1, 2 and 3 combined could be interpreted such that there are three major groups of students within the school: students who like science and math, students who are most interested in arts, and social studies and students who like to participate in sports. This interpretation could be seen to support the hypothesis.

f. How is the specialisation in subject area related to participation in extracurricular activities?

Students indicate that around 30% of their courses fall within their subject of interest, probably because they are limited by school rules about this. Most students indicate that very few of their extracurricular activities match with their curriculum. This can be explained because the favourite extracurricular activities music, sports and religion, are not part of the curriculum, meaning that the favourite extracurricular activity cannot match the curriculum.

Students who take more courses within their subject of interest participate in significantly more extracurricular activities which, they indicate, match better to their curriculum. These students mostly choose science, English languages, foreign languages, maths or social studies as a favourite school subject. They participate in the extracurricular activities foreign languages, English language, music, school organisation, community, service, religion, science and 'other' and believe that these are matched to their curriculum. Students who take more courses within their subject of interest are significantly more motivated on the 'to support my grades in current courses' indicator. Students who choose foreign languages as a favourite subject choose extracurricular activities motivated by their own interest. Students who say that their extracurricular activities match more with their curriculum score higher on the 'for my future education' and the 'to support my grades in current courses' motivation indicators. So the motivation for participating in extracurricular activities differs between those students who do and do not match their extracurricular activities to their subject of interest.

Unfortunately, hypotheses *d* and *f* remain unanswered in this research due to the lack of diversity in postsecondary education and ethnicity in the study group. However, some research questions can be answered. Since the positive association between postsecondary education and number of

extracurricular activities that students participate in has been proven previously (Marsh and Kleitman, 2002), it is possible to use the number of extracurricular activities as an indication for postsecondary education.

Assuming this link, correlations with high number of extracurricular activities could be extendable to postsecondary education. The students in our cohort who participate in more extracurricular activities are more specialised in their favourite subject as expected. However, they also indicate that these extracurricular activities are more matched to their curriculum than the other students who participate in fewer extracurricular activities. Contrarily, when studying these extracurricular activities that these highly motivated students participate in, they do not seem very much matched to the subject of interest. So, in the eyes of the students they are not diversifying their curriculum with extracurricular activities. However, in the eyes of the researchers these students do not match their extracurricular activities to their curriculum, which would eventually benefit the students' college application because the student may show a broader range of interests and skills that colleges look for.

4.2.Limits and benefits

One of the challenges that arose in the interpretation of the results is the fact that 95% of students indicated that they were planning to attend college upon completion of high school. This means that no analysis could be done on the influence of extracurricular activities and post-secondary education options. All that can be offered are possible explanations to clarify this feature of the results.

The Dutch education system uniquely segregates students according to academic ability. Each of the three major levels of high school prepares its students for a specific type of post-secondary education. As a result of this, the majority of students can make a fairly accurate guess as to which type of education (MBO, HBO or WO) or vocation they will continue to upon completion of high school. For American high school students, on the other hand, postsecondary options are less clearly defined. Considering that all students are in the same school, and may even take the same courses, students may not know which postsecondary education option they wish to or will actually follow.

In addition to this clarification, the status of colleges in the United States in comparison university education in the Netherlands could be taken into consideration. Each college in the United States has a different status and there is a big difference between the 'best' and 'worst' college. As a result of this, when a student states that he or she plans to attend college, it really depends on which college he or she expects or aims to attend when considering the true nature of their post-secondary education option. Thus, when 95% of respondents state that they plan to attend university college, this does not provide insight into the true nature of the post-secondary education for the students involved in this research.

The manner by which the study group was selected could add to the uniformity in the data for this particular component. Students completed the questionnaire on a voluntary basis. An email containing a link to the survey was sent to all students whose parents had consented to their participation, but actual completion of the survey remained optional. The selection that took place as a result of the research procedure may have influenced the results. An example of the selection that may have taken place is that those students who strive for academic excellence may be more inclined to participate in research and thereby be more likely to have completed the questionnaire, yielding a possible imbalance in the data. For example, more 10th and 11th grade students completed the survey than those in 9th and 12th grade.

A final clarification could be the nature of the school used for this research. State College Area High School (SCAHS) is located in State College, in central Pennsylvania. This town is dominated by the presence of the Pennsylvania State University (PSU). PSU is the main employer of this town, and many of the parents of students at SCAHS are affiliated with the university. Although highly educated parents do not necessarily yield academically able children, this presence of a large university could stimulate more students to aim for a university or college education. In addition to this, the school has a high graduation rate at 95%, in comparison to the state average of 90% (School Report Card 2007-2008, 2); it could thus be considered an academically successful high school, which leads to an inability to investigate the influence of all post-secondary education options.

These clarifications only offer educated guesses into results of the survey that indicated with 95% of students aspire to attend university or college and have by no means been investigated. What is clear is that it may be worth differentiating between different types of university or college programmes in future research. Because the running of a pilot study in the student group was not permitted this issue was only highlighted when all data had been gathered.

Although useful insights were gained from this research, several questions remained unanswered. There are multiple limits to the research that could account for this, and could provide recommendations for future research. One of the major limits of the data was the lack of variety indicated in postsecondary options. In the questionnaire students were able to indicate what they believed their postsecondary education option to be instead of the data being based on the actual choice made. Repeating this study with a longitudinal group, where actual college attendance could be measured could allow for more accurate data.

As has been stated, the school is located within a college town, so the expectation to attend college after high school seems viable for many students. This highlights another limit, in that this school may not be representative of the average American high school due to its location and the fact that most of the students are white. It is therefore recommended that the study be repeated at other high schools, in different settings to allow for results that can be generalised more.

Considering the idea that the goal of the research is to provide insight to improve the education system in the Netherlands, it can also be recommended to repeat the study within other educational systems that include strong extracurricular programmes, such as the English education system. This research was limited to one school within one state education system, and it would thus require research beyond this one high school to allow for further insight into the link between extracurricular activities and postsecondary education options.

Based on both previous research and on the results of this research, the introduction of extracurricular activities is a positive asset to a school. The advise for the Dutch education system, and other education systems that currently lack extracurricular activities, would be that extracurricular activities allow students to broaden their regular curriculum, and pursue activities that to create a positive atmosphere in school.

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