THE EFFECTIVENESS OF CREATIVITY, ACTIVITY, SERVICE (CAS) PROFESSIONAL DEVELOPMENT IN TURKEY

A MASTER'S THESIS

BY

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THE PROGRAM OF CURRICULUM AND INSTRUCTION
İHSAN DOĞRAMACI BILKENT UNIVERSITY
ANKARA

APRIL 2017

THE EFFECTIVENESS OF CREATIVITY, ACTIVITY, SERVICE (CAS)
PROFESSIONAL DEVELOPMENT IN TURKEY

The Graduate School of Education

of

İhsan Doğramacı Bilkent University

by

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In Partial Fulfilment of the Requirements for the Degree of

Master of Arts

in

Curriculum and Instruction

Ankara

April 2017

İHSAN DOĞRAMACI BILKENT UNIVERSITY

GRADUATE SCHOOL OF EDUCATION

Thesis Title: THE EFFECTIVENESS OF CREATIVITY, ACTIVITY, SERVICE (CAS) PROFESSIONAL DEVELOPMENT IN TURKEY

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April 2017

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

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ABSTRACT

THE EFFECTIVENESS OF CREATIVITY, ACTIVITY, SERVICE (CAS)
PROFESSIONAL DEVELOPMENT IN TURKEY

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April 2017

This research aimed to explore the effect of professional development for the

implementation and student learning outcomes in Turkey for the international

curricula known as Creativity, Activity, Service (CAS). The research design was

pre/post-test intervention design. The study explored students' and teachers'

perceptions on CAS by pre-survey before the professional development workshop

and webinars. After the survey, a workshop and two follow-up webinars were

conducted with teachers and students. Participants prepared some school-wide

improvement plans for CAS and tried to implement them over 7 months. Then, the

study investigated whether these workshop and webinars had an effect on the CAS

program by conducting a post-survey 7 months after schools' implementing their

CAS improvement plans. In addition to the student and teacher surveys, data were

collected by observations during the workshop and webinars and feedback forms

were filled out by participants. Surveys were divided into subsections to see the

effect in different ways. Paired sample t-test and Wilcoxon signed-ranked test were

used to compare any possible improvements across the schools. Results indicated that there was almost no significant effect of professional development on CAS. Feedback of participants was mostly positive about workshop and webinars and all participants found them useful to develop CAS implementation, and most promising in the overall impact of the PD program studied were the findings from the final survey of open-ended questions that reported on actual actions taken by six participating schools. Due to promising practice shown in the actions the schools were able to take, recommendations are made for further studies that expand on these initial findings.

Key words: Professional Development, International Baccalaureate Diploma Programme, extra-curricular activities, experiential learning

ÖZET

Yaratıcılık, Etkinlik ve Toplumsal Hizmet (CAS) Mesleki Gelişiminin Türkiye'deki

Etkililiği

Ezgi Yazgan

Yüksek Lisans, Eğitim Programları ve Öğretim
Tez Yöneticisi: Yrd. Doç. Dr. Robin Ann Martin

Nisan 2017

Bu araştırma mesleki gelişim seminerlerinin okullardaki yaratıcılık, etkinlik ve

toplumsal hizmet (CAS) programı ve öğrencilerin öğrenme çıktıları üzerindeki

etkisini incelemiştir. Mesleki gelişim seminerleri öncesinde anket uygulanarak

öğrenci ve öğretmenlerin okullarındaki CAS programı hakkındaki görüşleri

öğrenilmiştir. Anketten sonra öğretmenler ve öğrencilerle bir seminer ve iki internet

tabanlı seminer düzenlenmiştir. Okullar seminerler süresince hazırladıkları CAS

gelişim planlarını 7 ay boyunca uygulamaya çalışmışlardır. 7 ay sonra bir anket daha

uygulanıp bu mesleki gelişim seminerlerinin CAS programı üzerinde etkisi olup

olmadığı incelenmiştir. Öğrenci ve öğretmen anketlerine ek olarak data toplamak

için seminer gözlemleri ve seminerler sonunda katılımcılardan toplanan geri bildirim

formları kullanılmıştır. CAS programının farklı yönlerine olan etkileri görmek için

anketler alt bölümlere ayrılmıştır ve okullar arasındaki etkileri görmek için

eşleştirilmiş örneklemler t-testi ve Wilcoxon eşleştirilmiş diziler testi kullanılmıştır.

Sonuçlar mesleki gelişim seminerlerinin CAS programı üzerinde neredeyse hiç bir

etkisi olmadığını göstermiştir. Fakat katılımcıların seminerler ile ilgili neredeyse tüm

geri bildirimleri pozitifitr ve tüm katılımcılar bu seminerlerin CAS programı uygulamasını geliştirmek için faydalı olduğunu düşündüklerini belirtmiştir. Ayrıca, CAS koordinatörlerinin yaptığı son ankette katılımcı okulların bu süreçte CAS ile ilgili gerçek anlamda gerçekleştirdikleri adımlar görülmüştür. Bu adımlar okulların CAS uygulamasını geliştirebileceğini gösterdiği için ilerdeki çalışmalar için sonuçları geliştirebilecek öneriler verilmiştir.

Anahtar Kelimeler: Mesleki Gelişim, Uluslararası Bakalorya Diploma Programı, müfredat dışı faaliyetler, deneyimsel öğrenme

ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

Introduction

Creativity, activity, service (CAS) is a core curricular component in the International Baccalaureate (IB) that involves a range of activities which extend students' personal and interpersonal learning (International Baccalaureate Organization (IBO), 2015). It is an especially important program for understanding how purposeful activities and personal challenges can be incorporated into Turkish school activities. CAS is particularly well suited to help students to be individuals who are aware of their role in relation to others and to explore their interests and express their feelings, ideas and personalities (IBO, 2015). Currently, CAS is part of the core curricula of International Baccalaureate Diploma Programme (IBDP) schools for high school students in grades 11 and 12.

However, in Ministry of National Education (MoNE) curricula for grades 11 and 12 in Turkey is generally focused on the university entrance exam and learning only knowledge-based subjects without any experience. MoNE schools have some club hours which have different extra-curricular activities like sports, music, and art. These activities change according to facilities of schools but they are only several hour lessons in most schools and they are generally considered as the least significant hours by both teachers and students. Some schools are delivering IBDP curricula in addition to the MoNE curricula (including all of the participating schools in the present study). Some of the reasons for delivering IBDP curricula are giving importance on personal development of students, as well as for supporting students who want to continue their education abroad.

A professional development workshop was organized and customized according to the needs of schools in Turkey for CAS. The Koç School in Istanbul agreed to host the workshop. The aim of this study is to examine the effect of the workshop on implementation of CAS in schools. The workshop was built on evidence for strong professional development programs (Desimone, Porter, Garet, Yoon, & Birman, 2002; Yoon, Duncan, Lee, Scarloss, & Shapley , 2007), combined with the needs of current IBDP programs given the new 2015 CAS Guide.

Background

Professional development

According to Guskey and Yoon (2009), "No improvement effort has ever succeeded in the absence of thoughtfully planned and well-implemented professional development" (p. 497). While IBDP schools and MoNE schools spend a lot of money on professional development programs for teachers, little has yet been studied about the extent to which they influence the actual improvement of schools. Furthermore, IBDP is one of the few international programs that directly addresses and works to improve the quality of experiential learning along with social responsibility. However, little is yet known about how professional development can help schools improve their implementation of experiential curricula.

The professional development report of Desimone et al. (2002) concluded that professional development has effects on teachers' instruction. As the conducted workshop aimed to effect teachers and CAS coordinators, the results and methods of Desimone et al. (2002) were informative. One of the most important results of this research is that professional development is more beneficial when there are groups of teachers who are in the same school, department, or grade level and teachers should not be passive, they should engage in activities, be active in order to understand

students' feeling, mentality, and behaviors better. The workshop in Koç School was customized for supporting CAS at a whole school level by requiring that each school send a CAS team for participating in the workshop; so there were teachers from the same school, who mostly came from grade levels 11-12.

In addition, the research of Yoon et al. (2007) shows a clear link between teacher professional development and student achievement. They analyzed nine studies with significant results for improving students' academic achievement in mathematics, science, and reading and English/language. The average time of professional development in the nine studies was 49 hours. The results of these studies show that teacher professional development increased students' achievement by 21 percentile points. Another result of Yoon et al. (2007) was that when teachers receive more than 14 hours of professional development, it shows a positive effect on student success. The professional development workshop for my study is also about 16 hours so this research can be helpful by showing comparative studies with a similar duration. Although Yoon et al. (2007) focused on professional development targeting increased academic achievement, further explorations could reveal that similar durations of professional development may influence other outcomes as well.

Furthermore, professional development is important for strong implementation of CAS. Martin, Tanyu and Perry (2016) studied CAS implementation in IBDP schools in Turkey and found an inconsistency in the training of teachers to support and advise students in CAS experiences. This awareness helps teachers to be more effective on helping students about their CAS projects and experiences. Martin, Tanyu and Perry (2016) also noted that professional development increases teachers' desire to help students with CAS.

Experiential learning

An assumption of most educators is that students can learn from experience. The process of learning from experience is learning by doing so having experiences gives students' opportunities to be active learners by applying their knowledge with the real world. Experiential learning activities often include extracurricular activities outside the classroom which promotes students' deeper learning by experiencing.

CAS requires experiential learning, according to students' interests and skills so it promotes an effective learning. Okoli and Abonyi (2014) examined the effects of experiential learning on the secondary school students' biology achievement. Their study shows that the students who were taught biology by experiential learning strategy have higher achievement scores. The results of the study show the effect of developing teachers for better supporting students' social and emotional development so these results may also indicate that experiential learning can be helpful for the CAS outcomes.

CAS research

CAS is a part of the core curricula of IBDP schools for 11th and 12th grade high school students. Creativity aims to develop the creative thinking skills (like designing and creating an art project for kids, learn a musical instrument or a dance routine.), activity aims to develop the physical capacity of students and service aims to encourage students to participate in the services needed by the community to help others. CAS is well-suited to help students develop their responsibilities toward each other and the environment and to develop their social and emotional skills.

To get successful CAS outcomes, motivation of students and teachers is one of the most important issues. Billig and Good (2013) mostly focused on what are the

motivations and reasons of students to participate in service activities in their study. Also one of the findings of this study is about the effect of collaborative team work on students' improving complex thinking and communication skills. The CAS workshop examined by this study took into consideration students' motivations, and it is also including students from each school as part of the team.

In addition, Brodie (2014) indicates the absence of research knowledge about CAS in his study. CAS implementation is effected by the whole school system but according the findings reported by the researcher, most DP coordinators do not know their staffs' feeling about CAS, and DP coordinators do not have much detailed knowledge about CAS. He suggested that CAS should not be only the CAS coordinator's job but all staff members should be trained about CAS. There should be clear guidance for students about how to reflect, schools should spend more time in supporting CAS activities and reflection, and there should be more developed links between academic subjects and CAS. One of the aims of the workshop for this thesis is to encourage more teachers to be interested with CAS. They can be trained by the workshop about different parts of CAS (such as reflection and linking academic subjects to CAS activities) and become more knowledgeable about CAS. The more people in schools that are knowledge about CAS means the more that they can better support CAS implementations.

One of the important parts of the CAS program is supporting the reflection process. The dissertation of Perry (2015) focused on CAS reflection methods at six IBDP schools in Turkey. The problem was that students have difficulty about reflection; they think that reflections are useless for them, and they do not understand the benefits of reflection on their experiences, which means they may not be learning as much as possible from their experiences. Most of the students have difficulty about

reflection and Perry's evidence (2015) about opinions of students shows that the reflection process for CAS needs to be developed in IBDP schools in Turkey. Therefore, supports for improving reflection will be integrated into the elements of the CAS workshop that this study will be examining.

Problem

Internationally, there is increasing evidence of meta-analyses that school-based interventions for positive youth development and social and emotional learning programs can and do have positive effects on students for promoting positive mental health (Weare & Nind, 2011) as well as improving academic outcomes (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Durlak, Weissberg, & Pachan, 2010), and decreasing conduct problems such as bullying (Wilson & Lipsey, 2007). Little has yet been researched about how to implement CAS to support the best outcomes. Since programs like CAS are new in Turkey, every school may implement them in different ways. To increase the academic, emotional and social success of students, the implementation of programs like CAS needs to be improved. The customized workshop may help improve the implementation of CAS, but this cannot be verified without research to confirm it.

In addition, little data exist about the perception of teachers and students on CAS. Furthermore, the quality of CAS implementation is affected by how whole school systems support CAS, along with the extent to which teachers are involved. Yet, according to prior findings, teachers are often not aware of students' CAS goals and DP coordinators may only have basic knowledge about CAS (Brodie, 2014).

Purpose

The study used exploratory surveys that examined teachers' and students' perceptions about their school's CAS implementation and self-reported outcomes of CAS, along with qualitative data collected about a professional development workshop. The purposes of this research are; (a) to identify student perceptions about how their school is implementing CAS before the workshop, (b) to examine their improvement plans, then later identify to what extent the schools were able to complete them, (c) to learn perceptions of participants about the benefits of the workshop and its follow-up webinars, and (d) to examine the effects of professional development on the CAS implementation at schools seven months after the workshop.

Research questions

The research questions are:

1.   Prior to the CAS team workshop, what are student perceptions about CAS?

2a. What elements were included in each teams' CAS improvement plans?

2b. After seven months, which part of their improvement plans were schools able to complete?

3.   What were the workshop participants' perceptions about the value of the CAS workshop and webinar sessions?

4.   After seven months of implementing new CAS improvement plans in each school, did perceptions change about:

     a) the overall quality of how the school culture supports CAS?

     b) the overall quality of how CAS is implemented?

     c) self-reported outcomes of CAS?

If so, how did perceptions change?

Significance

Programs which include experiential learning and social emotional learning are well-known curricular approaches in the curriculum of U.S and Europe; however, the Turkish educational system is still working to integrate them into curricula. Research about professional development for experiential learning programs is limited to studies published in other countries, which have done more in the field of youth development research. This study will begin to fill this gap in the research literature for Turkey.

This study is a first study about developing CAS implementation in MEB/IB schools by a professional development workshop. The workshop has been customized according to the current needs of IBDP schools with aims to develop CAS implementation at schools and based on the new CAS guide (International Baccalaureate, 2015). Nine schools participated in the workshop with a team; a closer examination of those participating schools allows the schools as well as the Ministry of Education to see whether or not a targeted team-approach to professional development influences school cultures and strengthens an experiential learning program. Furthermore, this study will help the schools in Turkey to see the challenges of their CAS program so that they can make some improvements. Regardless of the workshop outcomes, the research highlights strengths and weaknesses of the professional development workshop, so that improved workshops can be developed in the future.

Limitations

A practical limitation of the research is limited time. To impact school culture, a long amount of time for professional development is required but this study can only provide about 16 hours which include a two day workshop and two follow-up

webinars. Nonetheless, the team approach being used, combined with prior research for supporting the customized strategies of the workshop, make it stronger in its design than most CAS workshops. Another limitation is that self-reported data was used for the study, but some people might not want to reveal completely accurate truths about themselves, or they may over-estimate or under-estimate their actual CAS outcomes. This also affects the results of the study.

In addition, for practical purposes only the schools that were chosen and willing to participate in the workshop were studied. Six schools were sampled by the pre-test survey; however, only 5 schools were able to complete the post-survey. Nonetheless, the study represents challenges faced by many of the other IBDP schools in Turkey.

Another limitation is that some schools may engage in other activities beyond this workshop for enhancing their CAS implementation, which may influence the findings of this study. To monitor this limitation, a short follow-up survey of CAS coordinators collected data about this issue. For these reasons, matching design was used and students who are in the same school, same gender and have most common demographics were matched in the pre/post-survey.

Further, the original aim was to conduct pre-survey with fist year IBDP students and then conduct post-survey with the same students who became second year IBDP students. However, most of the students were not the same students in pre and post-survey. Also most of the post-survey participants of School 2 were first year IBDP students.

Definition of key terms

International Baccalaureate Diploma Programme (IBDP): "The Diploma Programme is a rigorous pre-university course of study designed for students in the

16 to 19 age range. It is a broad-based two-year course that aims to encourage

students to be knowledgeable and inquiring, but also caring and compassionate."

(CAS guide, 2015, p. 2)

CAS (creativity, activity, and service): CAS is an experiential learning

program organized around the three strands of creativity, activity and service for

IBDP. According to the CAS guide (2015), the strands are defined as follows:

> Creativity—exploring and extending ideas leading to an original or interpretive product or performance
>
> Activity—physical exertion contributing to a healthy lifestyle
>
> Service—collaborative and reciprocal engagement with the community in response to an authentic need (CAS guide, 2015, p. 8).

CHAPTER 2: REVIEW OF RELATED LITERATURE

Introduction

This study examined the effect of professional development on the implementation of CAS at schools in Turkey. Many students face difficulties about their CAS experiences and especially reflecting on learning from them so teachers' help is very necessary and important for students. For this study, a professional development workshop was conducted and one of the aims of this study was to track the effect of professional development on CAS implementation.

Before looking at CAS implementation specifically, this chapter provides more contexts about the IB, features of CAS, how the quality of CAS implementation is related with professional development (PD) and experiential learning. The chapter starts with background about the IBDP and research that indicates challenges faced by IB school leaders. Since CAS is a core element of the IBDP, background studies are also summarized for establishing an initial foundation about research on CAS. Some studies about the types of CAS activities are reviewed along with general information about the 2015 CAS guide, implementation of CAS in schools, interactive learning in CAS and CAS reflection.

Furthermore, studies on professional development (PD) review issues on developing teachers and addressing CAS implementation needs so that more teachers become knowledgeable about CAS. Research on the relation between teacher PD and student achievement in STEM will be explored as a way of examining similar issues faced by CAS. Experiential learning is about learning by doing and it includes extracurricular activities and service learning. Since CAS activities require experiences, experiential learning is an important component of CAS.

International Baccalaureate Diploma Programme (IBDP)

CAS is one of the three core elements of IB and every student should accomplish CAS to be successful in the Diploma Programme. For this reason, to learn the aspects of IB that may influence how much emphasis schools give to their CAS programs is necessary to understand details about strategies for improving the implementation of CAS.

It can be useful to review briefly the history of IB and its aspects before moving into the details of the IB. Hill (2002) generally describes the history of international education and its development including the reason for the emergence of the IB Diploma Programme in the 1960s. In consequence of a teacher conference in the International School of Geneva, the first IB course as in modern history was created in 1962. Later, the IB programme was developed for the aims of increasing students' international understanding and critical thinking skills through experiential learning and providing an opportunity to international students for earning a diploma with curriculum which is valid to enter universities throughout the world.

Hill (2002) explained that teachers of the International School of Geneva developed the IB profile and IB curriculum with the help of other schools. Through the creation of the IB, they sought to develop an international curriculum that could be applied all around the world. Thanks to the International School of Geneva, educators came together and made contributions toward this aim. As the first Director General of the IB Organization, Alec Peterson contributed to many aspects of the IB's early curriculum and assessment. After more improvements on the IB Diploma Programme, international schools started to apply a common curriculum and in one of the conferences in 1965, the number of the IB subjects was decided to be six with a compulsory activity. This compulsory activity later became CAS. Hence,

improvement of international education was a long process led by both schools and individuals.

During the long process of IB development, its learner profile was also developed. Currently, the IB learner profile includes a series of characteristics or traits, including being inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective. Hence, it was designed to further the goal of all IB programmes to encourage students to be internationally minded people. International mindedness is one of the main aims of the IB.

Looking at the development of international mindedness from the 17th century to this century, Hill (2012) explained how education focused on memorizing facts and reading and writing was a large deficit of students in the 17th century. Then, improved education in the West started to focus on some different ideas like critical thinking skills and getting students to empathize with other people from other cultures. Many of these ideas arose as a result of student exchanges. By the 20th century, more students started to go to schools in other countries and international mindedness began to spread by such student exchanges to more countries. According to Hill, international mindedness changed in the West after it arose as evidenced by its changed foci before the 20th century and after the 20th century. Hill gave information about these altering views about what international mindedness is mainly and notable shifts during the mid-20th century. These changes focused on global issues to get more people to be knowledgeable about them,, spreading the global topics into public schools instead of only private schools, as educators developed their perspectives in different languages other than English, and the practices of international-mindedness were becoming a part of the whole school, not only traits for students to develop. As a result, this historical context gives an idea

about how international-mindedness arose, developed and changed from the past to today and how it is now situated in being supported by the CAS program.

CAS is a component of IB that gives students opportunities to be able to understand people who are different from those from their own culture, with different values and ideas. Walker (2010) complained about the international perspective of IB in his position paper. He claimed that the IB is too closely related to Western values but it does not give opportunity to students to see the cultures of East Asia. Ideas of some IB practitioners about this problem were given in the article like IB's not being international and universal enough and being too academic and deeply Western.

Walker (2010) further mentioned about differences of Western from Eastern culture and told about how IB learner profile could be different according to eastern culture. Also, the paper specifically critiqued the fact that IB is more related with individual development rather than individuals' contributions to others.

It is not easy the job of IB school leaders. The schools need more people who are knowledgeable about both IB and CAS to implement them well. Another paper by Lee, Hallinger and Walker (2011) aimed to examine the main challenges that IB school leaders faced and to identify inferences for researchers and IB school leaders, based on an explanatory mixed method study. Data was collected from five full-continuum IB schools, located in diverse places in East Asia (Thailand, Vietnam, Hong Kong, and mainland China), that had shown better performance in DP grades than other IB schools.

Quantitative survey data were collected and analyzed along with interviews of 68 teachers and administrators and 25 students. The findings focused on regional policies and parental expectations. It was shown that socioeconomic status of parents influenced the activities of school leaders; parents in East Asia have high

expectations for sending their children to international schools, so the effect of the IB diploma on university entrance is a pressure for school leaders. According to other results of the study by Lee, Hallinger and Walker (2011), managing parental expectations, recruitment selection, providing professional development for teachers are some of the challenges that IB leaders are facing.

The study by Saavedra (2014) aimed to analyze the improvement of IBDP students' "academic civic mindedness" and "model citizenship" at four schools in the USA. "Model citizenship" included being responsible, social justice citizenships that vote and help other people, follow laws and participate in activities to encourage democracy, along with knowing about the US system of government and public policy. Interviews with 24 students, 15 teachers and 4 DP coordinators were conducted to learn their attitude about DP's preparing students for citizenship. Successful students were selected by IB coordinators for the study. According to the findings, almost all students aimed to attend a four year college and a majority of the teachers reported that IB students have a stronger academic background than non-IB students. According to all interviews, DP encourages students to develop their civic engagement skills, and most students reported that they discuss daily events during the DP lessons and feel that the DP curriculum improves their "academic civic mindedness" and "model citizenship".

Research about CAS

CAS activities and experiences may be challenging for most students and they need effective feedbacks from teachers during this process. Especially the reflection process is one of the most difficult parts of CAS and most students may need feedback to apply different kind of reflection methods. Also, they may have difficulty to find the most appropriate CAS activities for themselves so guiding by teachers is very important to help the students.

In recent years, initial research has been conducted about the implementation of CAS in schools, interactive learning in CAS, CAS reflection processes, knowledge about CAS and the types of CAS activities.

Firstly it is important to understand that the IBDP has developed and revised a CAS Guide in recent years. The aim of Creativity, action, service (CAS) Guide (2015) was to guide CAS in schools, to inform people about CAS. It starts with the IB mission and IB learner profile and it gives information about the relation between CAS and the Diploma Programme, including academic subjects. The guide also gives information about CAS stages, projects, portfolios, experiments, reflection, CAS aims, learning outcomes, responsibilities of a CAS student and CAS standards. It also focuses on the importance of reflection and gives detailed information about it. The roles of CAS coordinators and staffs can be found in this document as well.

There are several studies about CAS and since CAS is the main component of this study, it is useful to examine these studies. Kulundu and Hayden (2002) aimed to find out that how Machanebg (a school in a small country in Southern Africa) had been successful about developing the CAS program. In addition, the study aimed to determine how CAS participants had been successful about reaching its aims. Researchers asked students and teachers what should be done to improve the challenge of CAS? How can CAS activities be linked to academic subjects? How can CAS be developed to support self-confidence? How can participants be more attached to CAS?

The researchers selected 38 students who were approaching the end of their final year of the IB. These 38 students were aged 17 to 20 and their national and socioeconomic backgrounds were varied. Questionnaires were included both Likert-style and open-ended questions. In addition to the questionnaire, researchers had

semi-structured interviews with the CAS coordinator and teacher supervisors to learn their opinions. The results showed that most of the students believed that every aim of the CAS program was being fulfilled. A suggestion from both staff and students was that activities should be appropriate to students' interests. Inappropriate activities caused negative effect on students' motivation. Researchers also found from interviews that some of the teachers and every student were not clear about CAS aims.

Martin, Tanyu and Perry (2016) aimed to examine CAS implementation and perceptions of students about CAS in six IBDP schools in Turkey. Researchers investigated experiential learning implementation as a component of academic curriculum. For these aims, the researchers developed a conceptual framework that shows factors that interconnected and influenced each other. These factors are Turkish culture, Turkish educational system, school culture, support structures of IBDP schools, supports and resources with school community and CAS. Hence, the study explains how these factors which shape CAS implementation of schools are related with each other and influence each other. Schools were visited for this study and individual interviews with one or more of the school administrators, CAS coordinator, teachers and students were conducted.

One of the findings of the research by Martin, Tanyu and Perry (2016) was that CAS coordinators have the biggest importance to make CAS successful in schools. Research also found that to have successful CAS implementation, the most important support structures are teacher training, administrative support, integration of CAS within the academic schedule, and integration with school culture within the broader context of national and IB curricula being implemented together. Martin, Tanyu and Perry (2016) also noted that professional development increases teachers' desire to

help students with CAS. These results can point toward the importance of increasing teachers' attendance in professional development workshops.

Hence, Martin, Tanyu and Perry (2016) indicated that in Turkey, CAS coordinators do not have enough CAS training, teachers are educated for traditional teaching methods but they are not knowledgeable about how to integrate experiential learning into their lessons and CAS and academic subjects are not integrated enough in lessons.

The purpose of a study by Cambridge and Simandiraki (2006) was to describe and analyze interactive intergenerational learning (IIL) project, to identify intergenerational practices in IB schools in the UK. They did this research in terms of Kaplan's topology of intergenerational relationships. The Interactive Intergenerational Learning Project was a pilot project. Its aim was to define and analyze learning in intergenerational activities. The results found that 82 percent of the schools noted that the Intergenerational Project is a part of their CAS activities and students' serving/teaching older adults activities are the most common activities. Also they learnt about which activities were the most common for all types of CAS activities. These findings also point toward the importance of schools in Turkey to find more choices of CAS activities that especially draw on the social interests of students. If students do activities that are attractive for them, more effective CAS outcomes can be obtained.

Cambridge and Simandiraki (2006) found that in spite of their feeling of being pressured by the Diploma Programme, students felt happy about being with older people. Also, as a consequence of intergenerational activities, students said that their behaviors and feeling had changed because they started to think about their future as an older and they continue to their relationship with older adults after graduated

because they love their older friends. In some ways, this seems to fall beyond the boundaries of pre-determined CAS outcomes but it is important to personal development of students.

The aim of the study by Billig and Good (2013) was to explore the types of experiential learning and service activities that students perform, what motivated students to choose their activities, in which ways students actuate civic mindedness, whether students think national or global impact of the activities and the perceived effects that participation in CAS has. Both a qualitative exploratory study and quantitative investigative study were conducted respectively. Researchers made interviews with 19 CAS coordinators and 112 IBDP students from 14 schools in United States, Canada and Argentina. Then, they conducted a student and alumni survey based on the findings of interviews and literature review for the quantitative study. The sample for surveys included 1295 students in 58 schools.

Findings of the Billig and Good research (2013) about the activities can be helpful to have an idea about what kind of CAS activities motivates students. The findings were that students participate in different kinds of activities such as tutoring, working in kitchens, visiting old people, schools in Argentina provide the most organized activities to students, but students in the United States schools usually make their own decisions about activities. According to findings about civic-mindedness; there are many students who do not understand the meaning of civic-mindedness clearly, whereas they think that participation in activities is beneficial to help the community. The study by Billig and Good (2013) concluded that most of the students were motivated by altruistic or humanitarian reasons rather than pragmatic reasons and most students choose their projects because they heard about them from their friends and/or the IB coordinator. Other findings of the research were; 77% of the students

focused on local service activities, students think that service activities are not linked to academic subjects, most students think that service activities are meaningful and they reported that participation in CAS did not influence their civic behaviors and they wanted to continue to help others after the program.

Deficiency of the knowledge about CAS is one of the main problems in schools. Brodie (2014) indicated the absence of knowledge about CAS by school administrators and wanted to raise awareness about making CAS as the whole school culture by this study. Brodie visited 10 schools for one day each and had interviews with CAS coordinators and DP coordinators. In addition, 2nd year DP students undertook a questionnaire with Likert scale scores from 1 to 5 to provide quantitative data.

Brodie's findings (2014)were: most of the DP coordinators do not know their staffs' feelings about CAS, DP coordinators do not have enough detailed knowledge about CAS, only one school considers about the reflection part, 40% of CAS coordinators have concerns about reflection, all of the CAS coordinators think that there is no link between CAS and academic subjects, most of the students are positive about the aims of the CAS program and enjoyed CAS, and almost every student is aware of the importance of CAS but not aware of the goal of reflection part. In conclusion, Brodie (2014) suggested that CAS should not be only CAS coordinator's job, all staff should be trained about CAS, there should be clear guidance about how to reflect for students, schools should spend more time on CAS activities and reflection, and there should be more developed links between academic subjects and CAS.

The reflection process is one of the most difficult parts of CAS for most students. Perry (2015) focused on CAS program reflection processes at six IBDP schools in Turkey. The problem was that students have difficulty with making and learning

from reflection, they think that reflections are useless for them, and they do not know the benefits of reflection. Many students usually engage with reflection only so that they do not to fail the Diploma Programme. The study focused on these problems and its aim was to learn about different methods of reflection in these six schools, to learn opinions of students, teachers, and administrators, and to explore more effective ways of reflection about CAS experiences. The findings were: Most schools use only one method for reflection and only some of them use different kind of reflection. CAS supervisors had not enough time to give feedbacks to reflections. Several schools used essays for reflection and this method was effective in showing more depth in reflection.

Lastly, after the research, a further study (Perry & Martin, 2016) was published about developing a more systematic framework derived from Perry's findings to guide schools for implementing and better supporting students in authentic reflection. The study by Perry and Martin (2016) examined the implementation of reflection on experiential learning at six IB schools in Turkey. Qualitative evidence about the timing of reflection, varied formats and contexts, and advisor feedback strategies were examined closely. Perry and Martin (2016) concluded that ineffective reflection decreases the likelihood of internalizing lessons learned by experiences. It was also found that attitudes of high school students on reflection for experiential and service learning are mostly negative and researchers discussed that for the most beneficial educational experiences, a more supportive process for reflection is really necessary. The main findings were that a static format and poor timing for reflection negatively affects the quality of students' reflections. The authors also noted that journal writing is the most common format of reflection and the weakest part of the reflection was the lack of feedback by teachers. Researchers suggested that critical attention to the

practice of reflection is needed for experiential learning activities because simply performing these activities does not necessarily contribute to learning. These findings can be helpful for other schools to see their weak points about reflection clearly and review suggestions that can be helpful for developing them.

Professional development

"Professional development is considered an essential mechanism for deepening teachers' content knowledge and developing their teaching practices. As a result, professional development could be a cornerstone of systemic reform efforts designed to increase teachers' capacity to teach to high standards" (Smith & O'Day, 1991 as cited in Desimone et al., 2002, p. 81).

To develop teachers' skills in giving effective feedback and guidance to CAS students, professional development has an important role. Professional development helps teachers to develop their knowledge, skills and effectiveness to be more helpful for students.

Firstly, it is useful to examine a study about the effects of PD on teachers' skills for delivering instruction because teachers' skills are important for developing students' skills and knowledge. Workshop and webinars for this study have both teachers and students as participant and more effect of these workshop and webinars on teachers means more effect on students. Desimone et al. (2002) analyzed the effects of professional development on teachers' instruction. It examined whether the professional development changes classroom teaching practice, including the use of technology, instructional methods and assessment methods. The researchers chose one elementary school, one middle school, and one high school in 10 districts to see the differences (totaling 30 schools). It was a three-year study and they surveyed 207 mathematics and science teachers at three points in time across three years (1997,

1998, and 1999). To see the changes in teaching, they surveyed the teachers who continued to teach the same course and they used exactly the same survey questions over the three years.

The results of the study by Desimone et al. (2002) showed that the use of technology, quality level of instructional methods, and variety of student assessments increased after the professional development, and that their effects do not depend on the prior methods of teachers, the subject areas of teachers or the school level. The results show that technology related to professional development is more beneficial when there are groups of teachers who are in the same school, department, or grade level and that teachers should not be passive, they should engage in activities, being active to understand better students' feelings, mentality, and behaviors.

A report by Yoon et al. (2007) used meta-analysis and showed the link between teacher professional development programs and student achievement. The study discussed that teacher professional development has effects on students' achievement; it identified some studies that showed teachers who get professional development can increase their students' success by an average of 21 percentile points. For this report, more than 1300 studies were examined and only nine of them met research standards for PD in the fields of mathematics, science, and reading and English/language arts. The report was based on What Works Clearinghouse evidence standards. What Works Clearinghouse (WWC) is a part of the U.S Department of Education's Institute of Education Sciences. It consists of assessments of scientific evidence on the effectiveness of educational programs, policies and practices. All of these studies are about workshops or summer institutes for elementary school teachers and their influence on student achievements. Also, in all of them, professional development was direct to the teachers and the contact hours were between 5 and 100 hours.

The average time of professional development in the nine studies of Yoon et al. (2007) was 49 hours. The other result of the nine studies involved the 20 effects sizes that were reported on student achievement. Only one effect was negative, which was in mathematics, and only one effect was zero, which was in reading and English/language arts, the other 18 were positive.

Science, technology, education, and mathematics (STEM)

CAS is similar to science, technology, engineering and mathematics (STEM) in that both are focused on making relations between real-world activities and academic subjects. STEM also aims to link science, technology, engineering and mathematics with each other by promoting learning by doing. Innovation is obtained from STEM and many professions require STEM knowledge. STEM is about applied knowledge that is similar to some aspects of CAS. Effective CAS implementation also requires making connections between CAS and academic subjects.

Corlu, Capraro and Capraro (2014) introduced STEM and analyzed education reform initiatives with research in Turkey and the world. According to prior studies, the authors highlighted trends about innovation, a theoretical framework of STEM education, STEM education model, STEM education at Turkish schools, STEM teacher education in Turkey, and the importance of integrated teacher education programs.

According to Corlu et al. (2014), "STEM education includes the knowledge, skills and beliefs that are collaboratively constructed at the intersection of more than one STEM subject area" (p. 75). According to some researchers mentioned in this article, subjects become more meaningful with the connection between real life and this connection requires STEM education. Cuadra and Moreno (2005) argued that there is a big difference between how STEM subjects are usually taught in schools and the

knowledge, skills, and ideas required for STEM education (as cited in Corlu et al., 2014, p. 75). Teachers are often not only knowledgeable about one subject, but may have responsibility to lead students to other STEM subjects. Corlu et al. (2014) support that educational development should focus more on the importance increasing STEM across countries. Only a small percentage of Turkish students, for example, are trained across STEM subjects and these students are educated in specialized schools. STEM education implementation is different in schools according to school level, school type, and teacher. While Ministry of National Education (MoNE)'s intended curriculum encourages teachers to integrate mathematics and science, the enacted curriculum focuses on standardized tests. As a conclusion, Corlu et al. (2014) indicated that integrated teacher education programs give opportunity to future teachers to implement, understand and teach STEM that helps students to see the connections between subjects and the real world.

STEM approach might be helpful for more qualified CAS implementations. STEM education aims to make connections between science, technology, engineering and mathematics and, depending on its design, it may also help students to improve their social skills. Teachers who are able to use STEM in their subject areas can be more effective to help students to become aware of the connection between CAS activities and academic subject areas. STEM could also be helpful for students to realize the relation between their CAS activities and academic subject areas by themselves. It could help students to integrate CAS and academic subjects rather than doing CAS projects as a separate area.

Experiential learning

Experiential Learning is learning by experience and CAS is mostly related with having experiences. CAS includes experiences in art, sports and social services

which are related to students' personal development, social and emotional learning, academic achievement, learning about themselves and others.

There is growing evidence about the relation between experiential learning and academic achievement. Okoli and Abonyi (2014) examined the effects of experiential learning on the secondary school students' biology achievement in their study. The participants were 74 secondary school students (34 males, 40 females) in Nigeria. The research method was a quasi-experimental design; there were control group students who were taught biology by expository strategy and students in an experimental group taught biology by an experiential learning strategy. Some students were in the experimental group and some students were in the control group. They conducted pre and post-test to both control and experimental group students. Regular biology teachers taught biology to students in both groups and the teacher who taught with experiential learning strategy were trained before the experiment. The experimental group students were given individual projects, interacted among themselves, and produced their own materials related to the subject. Conversely, students in the control group used the materials that were prepared in advance.

Data obtained in both pre and post-test for the experimental and control group were analyzed using an analysis of Covariance (ANCOVA). According to the results, the mean achievement score of experimental group students was 71.21 and the mean achievement scores of control group students was 50.53. It showed that experiential learning strategies had a significant effect on students' biology achievement. Okoli and Abonyi (2014) also examined the female and male students' scores and the results show that experiential learning increased both female and male students' biology achievement. Since CAS has experiential learning activities, results of the Okoli and Abonyi (2014) study show us possible effects of CAS on students' academic achievement which can be one of the outcomes of CAS.

Extracurricular activities

CAS experiences and projects give students opportunities to do extracurricular activities like art, physical activities and voluntary works. Students have their CAS activities outside the scope of regular curriculum so CAS consists of extracurricular activities. These activities are important for academic and social development of students.

Eccles, Barber, Stone, and Hunt (2003) summarized the arguments about the relation between extracurricular activities and positive youth development, with results that showed the positive effects of extracurricular activities involvement on academic outcomes and risk behavior outcomes during adolescence and young adulthood. Eccles et al. (2003) argued that constructivist and organized activities provide adolescents opportunities such as developing social, physical, and intellectual skills, developing a sense of agency as a members of one's community, having social networks, having supportive peers and adults, having opportunity to experience challenges and learn how to deal with them. Osgood, Anderson and Shaffer (in press) indicated that "several sociological studies in the 70s documented a strong link between adolescents' extracurricular activities and adult educational attainment, occupation, and income, even after controlling for social class and cognitive ability" (as cited in Eccles et al., 2003, p. 867). Larson and Verma (1999) also showed that "children and adolescents in the United States spend more than half of their waking hours in leisure activities" (as cited in Eccles et al., 2003, p. 866). It was further argued that participation in extracurricular and service learning activities increases academic success, job quality, and school participation, and it also provides a foundation for better mental health (Eccles et al.,, 2003).

Eccles et al. (2003) showed the effect of activity involvement on youth development by decreasing risky behaviors and increasing academic success. Since CAS requires

activity involvement, their study can be a guide to understand how students get positive outcomes by participating CAS activities. Eccles et al. (2003) elaborated the importance of activity involvement by a longitudinal survey study that included 1259 tenth grade respondents in southeastern Michigan. The researcher collected detailed information about activity involvement, risk behaviors, educational outcomes, job characteristics and family characteristics. There were several important findings of the research. Firstly, involvement in prosocial activities decreases risky behaviors like drinking alcohol, getting drunk and using drugs at grade 12 and ages 21-22. Secondly, participation in team sports increases risky behaviors like alcohol use and getting drunk, but it increases academic success at both 10th and 12th grade and increased job quality at age 24. Thirdly, performing arts decreases risky behaviors at grade 10 and 12, and it satisfies greater enjoyment of school and increases academic success, while participation in academic clubs also increases enjoyment of school and academic success. These results can be generalized to youth in other countries because having an interest help youths to spend quality time, prevent risky behaviors and having a regular activity like sports, music, art get youths to be more planned in their daily life.

Furthermore, according to findings of Eccles et al. (2003), participating in extracurricular activities satisfies better educational outcomes, participation in sports, school-based activities and clubs increases the likelihood of being enrolled full time in college at age 21. Thus, Eccles et al. (2003) argued that "extracurricular activities can facilitate adolescents' developmental need for social relatedness, and can contribute to one's identity as an important and valued member of the school community" (Eccles et al., 2003, p. 874).

Service learning

CAS includes service and service learning which encourage students to use their academic knowledge voluntarily to help other people and the community. By service experiences in CAS, students find opportunities to work for the needs of community.

Thus, it is useful to examine research about the relation between community service activities and social change. The research conducted by Ward (2012) examined whether community service projects provide an opportunity for social change. Ward (2012) defined Team Peru as "an experiential, extracurricular community service program at Copenhagen International School" (Ward, 2012, p. 4). The aim of "Team Peru" is to give opportunity to students to affect social change. The other aim of the study was to understand the meaning and incentive of participating in international community service projects to a group of international students. The study analyzed whether such CAS projects in the International Baccalaureate encourage and promote chances for social change and whether attending such projects has an effect on personal agency. Participants were 19 alumni of Team Peru. The researcher conducted an online survey and online interviews with participants between 17 and 23 years old.

One important finding of the research by Ward (2012) was that respondents claimed they were especially encouraged in developing their willingness to help other people. For service projects, students need to be encouraged to help people. Most of the sample explained that their motivation was to travel to other countries with peers and work together, none mentioned about improving their CV, some said that the best way to motivate others is by developing yourself personally, to be the part of something is encouraging. Projects of CAS helped students to feel as a part of something. Many respondents mentioned about what they learned about themselves

when asked what they had learned from their experience, they discussed the influences of Team Peru on developing their values and talents (Ward, 2012).

Other studies have shown the relation between service learning and academic achievement. The research agenda report by Furco (2013) includes a summary of effects of service learning on academic achievement and school success. Furco (2013) includes findings of several studies that claim that service learning increases students' grades, school attendance and students' performance. The students who participated in service learning stated that they have learned more in service learning classes compared to other academic classes taken in the past. According to the findings of most studies reviewed by Furco, students' performance on academic subject learning and service learning have a positive relationship and service learning decreases student absenteeism, student misbehavior and increases students' grades.

In spite of the benefits of service learning on students, the opportunity to build knowledge about its affects is not enough. In addition, researchers have conducted many studies by supporting service learning so this situation causes less rigorous evidence of benefits of service learning. Furco's report also recommends strategies to build the evidence of service learning strategies. It suggests that researchers need to conduct more large scale experiments, they should collect data on implementation and work to confirm academic advantages of service learning. The report also suggested that researchers should focus on empirical evidence on learning, include measures of learning, conduct longitudinal, developmental studies and secondary analyzes and explore connections to existing and new funding sources.

Chung and McBride (2015) argued for the practical implementation of a school-based positive youth development model that utilizes service learning to develop social skills of middle school students in their study. Service learning is a part of

CAS so although their study was about middle school students, the results show the effect of service learning on CAS outcomes like social skills. They focus on the significance of social and emotional learning for adolescents and the use of a positive youth development framework. In this way, they summarized the possible social and emotional results of service learning as they introduced a case study of the Wyman Center's Teen Outreach Program as a service learning example. Chung and McBride (2015) argued that service learning should not be confused with volunteering and community service, they are only two positive forms of service learning within a community. They restated ideas of other researchers about the benefits of service learning like increasing students' social, emotional, critical thinking and problem solving abilities, encouragement of group work. They asserted that service learning encourages deeper learning and youth development. Again, although their research was conducted with middle school students, service learning is an important part of CAS and findings point to the importance of deeper service learning on learning and youth development.

CHAPTER 3: METHOD

Introduction

Firstly, this chapter explains how the study will examine teachers' and students' perceptions about their school's CAS implementation before a workshop and their self-reported outcomes of CAS. Secondly, the chapter describes techniques for monitoring the workshop and webinars and participants' thoughts about them. Thirdly, it discusses processes for monitoring the CAS-related improvements of schools about CAS via their improvement plans, to examine the potential effects of the professional development workshop. Lastly, the chapter also describes statistical analyses to examine the differences in teachers' and students' perceptions about their school's CAS implementation after implementing CAS improvement plans.

Research design

As this research aims to assess the effectiveness of the workshop across the participating schools, the research design is a pre/post-test intervention design. It examines the effects of professional development on CAS implementation at schools seven months after the workshop. The pre/post survey is designed based on issues identified by prior research as critical to how well CAS is implemented in Turkey, along with feedback from CAS coordinators about the needs of CAS given the recently revised IBDP CAS Guide (2015). The professional development workshop was customized according to feedback from CAS Coordinators and other administrators in the workshop schools to learn the needs of schools about implementation of CAS. The professional development intervention was also described using both observational data, along with feedback from participants. By

using a pre/post design, with a cross-section of both teachers and students in grades 11 and 12, the effectiveness of the CAS workshop for improving IBDP schools could be monitored.

In addition, participant feedback and outcomes (in the form of school improvement plans) of the professional development workshop were described and analyzed.

Context

In Turkey there are 43 IBDP schools as of 2016 and most of them have both IB and MEB curriculum. All participating schools of this study have both IB and MEB curriculum. MEB curriculum has only small requirement about social activities but CAS is an integral part of the IBDP. This situation creates some challenges for students about implementing CAS and studying academic subjects at the same time. Also CAS is not graded so there are some academically focused students who do not care about CAS, along with teachers who often lack knowledge about its significance to student learning in the broader school context.

Sample/Participants

All IBDP schools in Turkey were invited to participate in the workshop via announcements at an IBDP meeting in December 2015 and Turkey's IBDP mailing list. Nine IBDP schools choose to participate in the workshop. The participating schools represent small to large IBDP schools that have been implementing the IBDP for the past 2 to 22 years. Just over half of the workshop schools also participated in the survey research. The others were asked to participate in the surveys but unable due to timing during the school year. Participants of the workshop were 11th grade students in IBDP schools, CAS coordinators, some IBDP coordinators, and teachers from nine IBDP schools in Turkey. See Table 1 for the facts about the participating schools. The pre-survey was conducted with both IBDP students and the teachers

who help with CAS in six schools and the post-survey was conducted five of these six schools because one of the schools could not be reached. See Table 2 for the summary of the activities in which the schools participated. Student pre-survey was conducted by only Grade 11 students so that a post-survey could be conducted with them again in the following year. However, not all the post-survey participants were same as the pre-survey participants. For this reason, students were matched according to their school, gender and common demographic issues and matched 42 students were analyzed for the last research question. For the pre-survey, there were 59 male, 97 female student participants along with 10 male, 13 female teacher participants. For the post-survey, there were 38 male, 46 female student participants, and 2 male, 9 female teacher participants. Six of the pre- and post-survey teacher participants were the same so 6 teachers were analyzed for the last research question.

Participating IB students generally preferred IB to be able to go abroad for their university. Although most of them focused on academic success, there are some students who want to be active and social in addition to be successful academically.

Table 1
Facts about the total numbers of students and teachers engaged in CAS at each school

School Name	Location	Year IBDP started	Number of Year 1 IBDP students	Number of IBDP/ CAS teachers
School 1	İstanbul	1994	76	9
School 2	Ankara	1999	288	12
School 3	İstanbul	2014	--	--
School 4	İstanbul	2005	38	21
School 5	Kocaeli	2005	25	10
School 6	Ankara	2008	18	21
School 7	Erzurum	2010	22	23
School 8	İstanbul	2013	45*	3
School 9	İstanbul	2014	27*	1

*Note: At Schools 8 and 9, the first year IBDP students are in 10th grade, in contrast to the other schools where the first year IBDP students are in 11th grade.

Table 2

A summary of activities in which schools participated

Schools	Pre-Survey	Workshop	First Webinar	Second Webinar	Post-Survey
School 1	✓	✓			✓
School 2	✓	✓			✓
School 3		✓			
School 4	✓	✓	✓	✓	✓
School 5		✓	✓	✓	
School 6	✓	✓	✓	✓	✓
School 7	✓	✓	✓		✓
School 8		✓			
School 9		✓	✓	✓	

Instrumentation

The data collection instruments were designed to help the study to develop a better understanding of the attitudes of IBDP students and teachers about CAS, before and after the workshop. A pre-survey and post-survey about student and teacher attitudes was conducted at two points in time, along with feedback about the quality and value of the CAS team workshop. This data is helpful to make direct links between the improvements and the activities conducted during and after the workshop. Both a student version and a teacher version of these online surveys have been developed on Google Forms, in English. The survey was pilot-tested in advance with several CAS coordinators and students with items refined to reflect feedback about potential misinterpretations.

Section 1 of the surveys collects demographic facts about each student and teacher including students' career goals and interests outside of the school and teachers' subject area, extra-curricular activities they suggest as well as their interests beyond school that may relate with their engagement in CAS. Section 2 of the survey has 24 5 point-Likert scale items about features of the school culture that may influence CAS. Section 3 of the survey includes 27 5 point-Likert scale items on specific

issues within CAS that the workshop aimed to improve and Section 4 of the survey

includes 24 5 point-Likert scale items about CAS outcomes.

Surveys have subscales to monitor specific potential improvements from before to

after workshop. See Table 3 for subscales used in the CAS survey. CAS teams of

each school develop their own CAS improvement plans and 8 months later, schools

completed a follow-up questionnaire to note the extent to which they were able to

complete their improvement plans.

Table 3
Subscales used in CAS survey

Section 2: School Culture	Section 3: Supports for CAS	Section 4: Outcomes of CAS
Mission/Vision: shown through clubs, etc., that match with CAS aims	*Reflection:* supported by CAS advisors and CAS coordinators	*Self-knowledge:* awareness of strengths & areas for growth
Reflection: and self-assessment is supported school wide.	*Monitoring:* CAS experiences	*Skills:* Takes on challenges for developing new skills
Curriculum integration: how academic curricula are integrated or made practical	*Feedback:* about CAS choices, reflection, etc.	*Initiates and Plan:* CAS experiences
Feedback: monitoring expected school-wide.	*CAS-Curriculum coherence:* how CAS is integrated or made practical with other subjects	*Commitment:* shows commitment and perseverance
Teacher involvement: in student-centered learning and learning outside classroom.	Teacher involvement: in CAS	*Collaborative:* works collaboratively, has skills and recognizes the benefits
Building community: School works actively with parents and local community.	*Building community:* Community partners and parental involvement for maintaining CAS	Globalization: engaging with issues of global importance
		Ethics: considers ethics of choices and actions

Method of data collection

As this research involves high school students under age 18, formal approval from MEB was granted. Parental permission forms were collected by all schools participating in the pre- and post-surveys, as well as for the students who participate in the two-day PD workshop.

To collect data, two online surveys were conducted with students and teachers. Using a mixed-methods approach, both quantitative (Likert scale) data about the school culture and CAS program at each school, along with demographic data and a few open-ended items was collected. The survey was administered via an online format to IBDP students and teachers, in coordination with the schedules of the research schools. The IBDP and/or CAS coordinators at each school were given a short report about consistent procedures for delivering the survey to all IBDP students and teachers during the school day.

In addition, feedback was collected during and after the workshop to learn the workshop participants' perceptions about the value of the workshop and its follow-up webinars. Following implementation of customized CAS workshop, improvement plans at each school were also collected and 8 months later a short post-survey was emailed to all CAS coordinators from the participating workshop schools about how well their improvement plans were completed.

Furthermore, observation was also one of the data collection methods for this study. Observations and notes taken during the workshop constituted the workshop data.

Method of data analysis

This study describes the demographic data of each school based on Section 1 of the pre-survey. One –way ANOVA with .05 significance level (α) was used for pre-

survey to determine whether at least one of the schools is different from others according to the subscales. Results of the post-hoc tests were checked to locate the sources of differences identified. When homogeneity of variance assumption was met, Bonferonni test was used. When homogeneity of variance assumption was not met, Dunnet's C test was used.

For the first research question, Likert scale data from Sections 2, 3, and 4 of the surveys is summarized. The open-ended items of the survey provide supplementary evidence that is briefly summarized to indicate any aspects of the school cultures or CAS programs not covered by the Likert scale items.

For research questions 2 and 3, the study qualitatively describes the aspects of the intervention for which participants provide feedback, along with descriptive statistics of Likert scale items about the perceived quality of the overall workshop. The data analysis is mostly descriptive so that how the workshop (and its follow-up webinars) aligned with any improvements could be identified.

For research question 4, descriptive statistics were calculated for both teachers and students, paired sample t-test was used for matched students and Wilcoxon signed-ranked test was used for matched teachers as a statistical analysis to compare any possible improvements across the schools. Score reliability of the data was ensured through internal consistency measures (e.g., Cronbach alpha). A pilot study was already conducted to give validity evidence. A last survey for CAS coordinators also collected data about steps that the CAS team took to implement their improvement plan at each school.

For calculating the reliability coefficients of the subscales, the items and Cronbach alpha values can be seen in Table 4, 5, 6, 7, 8, 9, and 10. Alphas were within

acceptable range, except for a few scales where items were removed as they were not

aligned well with the other items. While comparing pre and post-survey results, their

only common subscales were compared for each section. There are some possible

reasons for some items not aligning. Students might have misunderstood questions

because questions are not in their native language. Questions include words like

rarely and little so these words might have caused misunderstanding if they did not

read carefully. Also most of the questions that did not align with other items in the

subscales included negative words like discourage, unimportant and these words can

be confusing for non-native speakers.

Table 4
Reliability coefficients of subscales for the student CAS pre-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.10, 2.17, 2.20, 2.23	.793
	Reflection	2.3, 2.14, 2.18	.671
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.829
	Feedback	2.2, 2.7, 2.24	.791
	Teacher Involvement	2.5, 2.15, 2.22	.773
	Building Community	2.6, 2.11, 2.16	.662
Section 3: Supports for CAS	Reflection	3.1*, 3.2, 3.10* 3.20, 3.21, 3.25*, 3.26	.645
	Monitoring	3.4, 3.5*, 3.14	.681
	Feedback	3.6, 3.7, 3.16, 3.27	.774
	CAS- Curriculum Coherence	3.3, 3.9*, 3.15, 3.22	.655
	Teacher Involvement	3.8, 3.13, 3.17*, 3.23	.701
	Building Community	3.11, 3.12, 3.18, 3.24	.761

Table 4 (cont'd)
Reliability coefficients of subscales for the student CAS pre-survey

Section 4:	Self-knowledge	4.8, 4.16, 4.23	.784
Outcomes of CAS	Commitment	4.4, 4.19, 4.24	.771
	Ethics	4.7, 4.14, 4.22	.817

*Reverse coded

Table 5
Reliability coefficients of subscales for the student CAS post-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.17, 2.20, 2.23	.707
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.774
	Feedback	2.2, 2.7, 2.24	.625
	Teacher Involvement	2.5, 2.15, 2.22	.688
Section 3: Supports for CAS	Reflection	3.1*, 3.2, 3.10* 3.20, 3.21, 3.25*, 3.26	.721
	Monitoring	3.4, 3.5*, 3.14	.669
	Feedback	3.6, 3.7, 3.16, 3.27	.658
	CAS- Curriculum Coherence	3.3, 3.15, 3.22	.651
	Teacher Involvement	3.8, 3.13, 3.23	.814
	Building Community	3.11, 3.12, 3.18, 3.24	.740
Section 4: Outcomes of CAS	Self-knowledge	4.8, 4.16, 4.23	.810
	Commitment	4.4, 4.19, 4.24	.689
	Ethics	4.7, 4.14, 4.22	.735

*Reverse coded

Table 6

Reliability coefficients of subscales for the teacher CAS pre-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.10, 2.17, 2.20, 2.23	.743
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.777
	Feedback	2.2, 2.7, 2.24	.793
	Teacher Involvement	2.5, 2.15, 2.22	.776
	Building Community	2.6, 2.11, 2.16	.685
Section 3: Supports for CAS	Reflection	3.1*, 3.2, 3.10* 3.20, 3.21, 3.25*, 3.26	.791
	Feedback	3.6, 3.7, 3.16, 3.19*	.758
	CAS- Curriculum Coherence	3.3, 3.9*, 3.15	.758
	Teacher Involvement	3.8, 3.13, 3.17*, 3.23	.906
	Building Community	3.11, 3.12, 3.18, 3.24	.817
Section 4: Outcomes of CAS	Self-knowledge	4.1*, 4.8, 4.16, 4.23	.820
	Skills	4.2*, 4.9*, 4.17	.636
	Commitment	4.4, 4.11*, 4.19, 4.24	.662
	Collaboration	4.5, 4.12, 4.20*	.632
	Global	4.6, 4.13*, 4.21	.803
	Ethics	4.7, 4.14, 4.15*, 4.22	.715

*Reverse coded

Table 7

Reliability coefficients of subscales for the teacher CAS post-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Curriculum Integration	2.9, 2.13, 2.19	.754
	Feedback	2.2, 2.12*, 2.24	.688
	Teacher Involvement	2.5, 2.15, 2.22	.840
Section 3: Supports for CAS	Reflection	3.1*, 3.2, 3.10* 3.20, 3.21, 3.25*, 3.26	.659
	Monitoring	3.4, 3.5*, 3.14	.740
	Feedback	3.6, 3.7, 3.16, 3.27	.698
	CAS- Curriculum Coherence	3.3, 3.9*, 3.15, 3.22	.878
	Teacher Involvement	3.8, 3.13, 3.17*, 3.23	.811
	Building Community	3.11, 3.12, 3.18, 3.24	.785
Section 4: Outcomes of CAS	Self-knowledge	4.8, 4.16, 4.23	.829
	Skills	4.2*, 4.9*, 4.17	.848
	Collaboration	4.5, 4.12, 4.20*	.746
	Global	4.6, 4.13*, 4.21	.884
	Ethics	4.7, 4.14, 4.15*, 4.22	.719

*Reverse coded

Table 8

Reliability coefficients of subscales for the matched-students CAS pre-survey and post-survey

Section	Subscales	Items	Pre-Survey Cronbach's Alpha	Post-Survey Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.10, 2.17, 2.20	.723	.782
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.772	.817
	Feedback	2.2, 2.7, 2.24	.761	.639
	Teacher Involvement	2.5, 2.15, 2.22	.687	.788
	Building Community	2.6, 2.11, 2.16	.644	.651
Section 3: Supports for CAS	Reflection	3.1*, 3.2, 3.10* 3.20, 3.21, 3.25*, 3.26	.629	.709
	Feedback	3.6, 3.7, 3.16, **3.19***, 3.27	.641	.762
	CAS- Curriculum Coherence	3.3, **3.9***, 3.15, 3.22	.755	.730
	Teacher Involvement	3.8, 3.13, 3.17*, 3.23	.755	.704
	Building Community	3.11, 3.12, 3.18, 3.24	.809	.777
Section 4: Outcomes of CAS	Self-knowledge	4.8, 4.16, 4.23	.634	.854
	Commitment	4.4, **4.11***, 4.19, 4.24	.663	.783
	Ethics	4.7, 4.14, **4.15***, 4.22	.675	.847

*Reverse coded

Note: Bold questions were not used for post-survey

Table 9

Reliability coefficients of subscales for the matched-teacher CAS pre-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.10, 2.17, 2.20, 2.23	.793
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.796
	Feedback	2.2, 2.7, 2.12*, 2.24	.845
Section 3: Supports for CAS	Feedback	3.6, 3.7, 3.16, 3.19*	.778
	CAS- Curriculum Coherence	3.3, 3.9*, 3.22	.720
Section 4: Outcomes of CAS	Self-knowledge	4.1*, 4.8, 4.16, 4.23	.783
	Skills	4.2*, 4.9*, 4.17	.797

*Reverse coded

Table 10

Reliability coefficients of subscales for the matched-teacher CAS post-survey

Section	Subscales	Items	Cronbach's Alpha
Section 2: School Culture	Mission and Vision	2.1, 2.10, 2.17, 2.23	.696
	Curriculum Integration	2.4, 2.9, 2.13, 2.19	.769
	Feedback	2.2, 2.7, 2.12*, 2.24	.791
Section 3: Supports for CAS	Feedback	3.6, 3.7, 3.19*, 3.27	.659
	CAS- Curriculum Coherence	3.3, 3.9*, 3.15, 3.22	.712
Section 4: Outcomes of CAS	Self-knowledge	4.1*, 4.8, 4.16, 4.23	.646
	Skills	4.2*, 4.9*, 4.17	.727

*Reverse coded

As a summary of the techniques and instruments used for this study, one –way

ANOVA was used for pre-survey to determine whether at least one of the schools is

different from others according to the subscales. After conducting post-survey, paired sample t-test and Wilcoxon signed-ranked test were used to compare any possible improvements across the schools. In addition, schools improvement plans and last survey for CAS coordinators which is about actions taken in schools were summarized. Workshop and webinar observations of the researcher and open-ended questions of surveys were also summarized as qualitative data of this study.

CHAPTER 4: RESULTS

Introduction

The analysis was divided into sections according to the research questions. First, pre-survey results which are about students' and teachers' perceptions about CAS prior to the CAS workshop were summarized. Then, the workshop was described based on the researcher's observations, followed by an analysis of participants' perceptions about the value of the CAS workshop which were very positive overall. CAS improvement plans were analyzed. Reflection and curriculum coherence are the two issues that schools want to improve most. Another section summarized participants' perceptions about the two webinar sessions. These perceptions were mostly positive. All of the participants found the webinar helpful and beneficial and some of them gave suggestions to improve the webinar. Then, actions taken in six schools (Schools 1, 2, 4, 6, 7, 9) were summarized showing how 3 schools gave more attention to follow-up while 3 schools appeared more constrained in the extent to which they were able to make improvements in the first 7 months after the workshop. Finally, after 7 months of implementing new CAS improvement plans in each school, improvements about implementing CAS and CAS outcomes were summarized. For all participant teachers and students, descriptive statistics were calculated, and for matched the 42 students paired sample t-test and for 6 teachers, results of the Wilcoxon signed-rank test were reviewed.

Perspectives before the workshop: Baseline data

As explained in Chapter 3, the CAS survey consists of four sections. The first section was about demographic information of students, the second section includes Likert

item questions about school culture, the third section has Likert item questions about supports for CAS and the fourth section has Likert item questions about outcomes of CAS. Likert item questions for all second, third, and the fourth section were divided into some subscales.

Demographics of students

School 1, School 2, School 4, School 6, School 7, and School 10 participated in the student surveys. See Table 11 for number of students from each school.

Table 11
Number of students from each school

Schools	Number of students who participated in the pre-survey	Number of students who participated in the post-survey
School 1	10	8
School 2	37	49
School 4	57	4
School 6	13	13
School 7	19	10
School 10	21	--
Total	157	84

Of the pre-survey participating students, 62% (n=97) were female and 38% (n=59) were male (1 student did not respond to this survey item). Besides, 54.8% (n=46) of the post-survey participant students were female and 45.2% of them (n=38) were male.

Participating students' IB school years range from 1 to 13 years, with the average being 6 years. Almost 22% of the students had attended an IB school for 10 years. Only 2 students had attended an IB school for 13 years.

Students indicated that they want to study different subjects in university. The high school subject that students indicated they were most likely to study as a major in university, is social sciences (psychology, social sciences, etc.), most preferred by 30.6% of the DP student respondents. The second most popular subject was the sciences (physics, biology or chemistry) with 26.6% of the student preferences, while 15.9% are uncertain, 12.1% selected arts, music or drama, 7% selected mathematics, 3.2% selected humanities, and 2.5% selected interdisciplinary studies. Other university majors in which students indicated an interest included business management, engineering, law, architecture, hospitality, psychology, media, technology, politics, creative writing, computer science, theatre, and marketing.

Students indicated a variety of long term career goals such as nonprofit sector, business, arts or creative professions, academics, economics, engineering, law or legal professions, medicine or health professions, education or learning professions, and sports training, athletic careers. Among these choices, business was the most preferred choice with 41.9%. Education or learning professions (teaching, work in museums, etc.) has the lowest percent (4.5%), while 9% of the respondents were uncertain about their long-term career goals. In addition to the multiple choice options given, some students also wrote other long term career goals topics such as architecture, event management, communications, psychologist, marketing and medicine engineering.

As for students' interests out of the school before IBDP, individual sports were the most preferable choice with 48.7% and gardening was the least preferable choice with 7.6%. Also music and arts, followed by crafts are among the most preferred interests with 37.3% and 35.4% respectively. In addition to the multiple choice options given, some students also wrote weight lifting, language learning, photography, automobiles, history, and economics.

Demographics of teachers

The teacher survey was completed by teachers who help with CAS in each school.

See Table 12 for the number of participating teachers.

Table 12
Number of teachers from each school

Schools	Number of students participated in the pre-survey	Number of students participated in the post-survey
School 1	9	--
School 2	4	3
School 4	3	3
School 6	--	2
School 7	3	3
School 10	4	--
Total	23	11

Among pre-survey participants, 56.5% (n=13) of teachers were female and 43.5% (n=10) were male. Nine of the post-survey participant teachers were female, only 2 were male.

Three participant teachers were not CAS advisors or coordinators but were general school administrators who had some involvement with CAS at their schools. For the others, the number of the years that they work as a CAS advisor or coordinators ranged from 1 to 8 years. Eleven participant teachers had been CAS advisors or coordinators for only one year. The average number of years that they had worked as a CAS coordinator or advisor was only 2.17 (SD=2.16). This indicates a rather lack of commitment across schools to the CAS program overall.

For the 20 respondents who were currently advising or supervising CAS students, 18 indicated that they advised or supervised between 5 to 419 students (showing a very

wide range of CAS workloads per teacher across schools). The number of years that they had worked in an IB school also ranged from 1 year to 18 years, with an overall mean average of 7.09 years (SD=4.38), indicating that the more experienced teachers are those most likely to be helping with CAS.

More than half of the participant teachers were teaching humanities (foreign languages, language/literature in native language) as a high school subject area. A further 30.4% of them were teaching sciences (physics, chemistry or biology) and the others were teachers of mathematics, physical education, social sciences (psychology, economics, etc.) or interdisciplinary studies. In addition to these high school subject areas, some were also librarians or teachers of TOK, BTEC, Social Media and MUN Debate Club, computer science.

More than half of the participant teachers indicated service work (helping others) as one the extra-curricular areas that they advise. In addition, 43.5% advised the activities like debate or MUN and 34.8% advised activities such as academic or science clubs respectively. Some teachers also advised animal care, arts and crafts, dancing, drama, gardening, music, individual or team sports, writing, and business enterprises or junior achievers.

More than half of the participant teachers (56.5%) selected service work (helping others) to describe their interests outside of school. Arts and crafts, music, science clubs, animal care and individual sports were the most preferred choices, as indicated by 30 to 47% of the teacher respondents.

Overall, more than 80% of the teachers who helped with CAS were teaching humanities or sciences. More than half of them were interested in service work and they advise service work to students as an extra-curricular area.

Student perspectives about how the school culture supports CAS

This section of the survey was not about CAS in particular but issues embedded in the school culture that might support CAS outcomes to show the aspects of schools' culture that might affect CAS implementation. This section has subscales to compare pre and post survey results; mission/vision shown through clubs and activities, reflection and self-assessment, curriculum integration, feedback, teacher involvement in student-centered learning and learning outside of classrooms, and building community. A one-way between subjects ANOVA was conducted to compare the 6 schools in terms of these subscales.

There was a significant mean difference between schools in their means scores of their mission and vision at the $p<.05$ level: $F(5,150) = 4.159$, $p = 0.001$. Post hoc comparisons with the Dunnett C test indicated that the mean score of the School 4 ($M = 3.07$, $SD = 0.99$) was significantly different from the mean scores of School 2 ($M = 3.58$, $SD = 0.48$) and School 7 ($M = 3.87$, $SD = 0.83$). This indicates that, School 2 and School 7 have higher rates than School 4 with respect to how students perceive mission and vision shown through clubs and school activities that match with CAS aims. However, there is no significant mean difference among other schools in terms of their mission and visions.

There was also a significant mean difference between schools in the mean scores of how students rated the use of reflection and self-assessment overall in the school at the $p<.05$ level: $F(5,149) = 4.068$, $p = .027$. Post hoc comparisons using the Bonferonni test indicated that the mean score of the School 4 ($M = 2.80$, $SD = 0.93$) was significantly different from the mean scores of School 7 ($M = 3.68$, $SD = 0.87$). As a result, students in School 4 rate their school lower than School 7 with respect to reflection and self-assessment that is supported school wide. However, there is no significant mean difference among other schools in terms of their reflection.

ANOVA showed that the mean difference between schools in the means scores of their curriculum integration was significant at the p<.05 level: F (5,148) = 2.678, p = .024. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 3.08, SD = 1.00) was significantly different from the mean scores of School 7 (M = 3.90, SD = 0.91). Consequently, the results indicate that School 7 has stronger curriculum integration than School 4 with respect to how students perceive integration of academic curricula across subjects, or made practical. However, there is no significant mean difference among other schools in terms of their curriculum integration.

Besides, mean difference between schools in terms of how students perceived the value of feedback from teachers overall at the p<.05 level: F (5,146) = 2.991, p = .013. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 3.03, SD = 0.99) was significantly different from the mean scores of School 7 (M = 3.94, SD = 0.86). As a result, students in School 7 rate their feedback school-wide higher than students in School 4. However, there is no significant mean difference among other schools in terms of their feedback.

ANOVA showed a statistically significant mean difference at the p<.05 level in scores of teacher involvement for schools; F (5,148) = 3.599, p = .004. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.73, SD = 1.03) was significantly different from the mean scores of School 7 (M = 3.966, SD = 0.92). As a result, students in School 4 rated their school lower than School 7 with respect to teacher involvement in student-centered learning and learning outside classroom. However, there is no significant mean difference among other schools in terms of the perceived teacher involvement.

Lastly, there was no significant mean difference between schools on their building community at the p<.05 level: $F_{(5,147)} = 1.198$, $p = .313$. This indicates that all six schools were fairly similar with respect to how students perceive the relations between their schools and the local community.

Overall, students in School 4 consistently rated their school lower with respect to factors of school culture that support CAS, while students in School 7 consistently rated their school slightly higher. However, for the most part students from the other four schools show similar attitudes about how well their school supports their learning process through the IB mission, reflection, curriculum integration, and feedback to students.

In addition, a few students' comments on the positive learning environment in their schools also give insights into how the schools are supporting CAS. Comments of some participants were:

"Our CAS advisor arranges trips outside of our city to help our CAS portfolio to become richer and this also helps us to gain new experiences." (School 6 student)

"Our CAS advisor is very supportive and she creates many opportunities for us to become aware of the world, take action and reflect to ourselves" (School 6 student)

In addition, School 7, School 10, School 6 and School 1 students indicated that their school provides extra-curricular activities, supports schools that work closely with other schools, local and global CAS activities and services are informing, tells students what they can do to improve and socialize more and they have art classes and sports fields.

Student perspectives about how CAS is implemented

This section of the survey is about supports for CAS in schools. It has subscales that are examined to give more specific insights into students' perspectives about CAS implementation (see Table 3). A one-way between subjects ANOVA was conducted to compare 6 schools in terms of these subscales.

There was a significant mean difference between schools in terms of how well CAS supports their CAS reflection process at the $p<.05$ level: $F(5,149) = 4.179$, $p = .001$. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.92, SD = 0.60) was significantly different from the mean scores of School 2 (M = 3.4048, SD = 0.78951) and School 7 (M = 3.51, SD = 0.63). As a result, students in School 1 rated their school lower than students in School 2 and School 7 with respect to reflection supported by CAS advisors and coordinators. However, there is no significant mean difference among other schools in terms of their ratings of CAS reflection.

ANOVA showed a statistically significant mean difference between schools in terms of how well students perceived the schools to be monitoring their CAS experiences at the $p<.05$ level: $F(5,147) = 5.040$, $p = .000$. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.90, SD = 0.81) was significantly different from the mean scores of School 2 (M = 3.71, SD = 0.88) and School 7 (M = 3.64, SD = 0.90). Consequently, School 4 had lower rates than School 2 and School 7 according to how well students perceive the schools to be monitoring their CAS experiences. However, there is no significant mean difference among other schools in terms of their monitoring.

ANOVA showed a statistically significant mean difference between schools in terms of how well students perceived the schools to be giving feedback about CAS choices,

reflection, etc. at the p<.05 level: F(5, 146) = 4.332. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.74, SD = 0.91) was significantly different from the mean scores of School 2 (M = 3.43, SD = 0.89) and School 7 (M = 3.46, SD = 0.86). Hence, rates of School 4 are less than rates of School 2 and School 7 according to the pre-survey. However, there is no significant mean difference among other schools in terms of the pre-survey.

There was also a significant mean difference in terms of how well students perceived their schools as supporting curriculum coherence within CAS at the p<.05 level: F (5,147) = 4.130, p = .002. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.79, SD = 0.79) was significantly different from the mean scores of School 2 (M = 3.54, SD = 0.72). As a result, students in School 4 rated their CAS-curriculum coherence lower than students in School 2. However, there was no significant mean difference among other schools in terms of their CAS-curriculum coherence.

ANOVA showed one mean difference between schools in terms of how well students perceived the schools to have teacher involvement in CAS is significant at the p<.05 level: F (5,147) = 3.109, p = .011. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 2.93, SD = 0.74) was significantly different from the mean scores of School 2 (M = 3.46, SD = 0.79). As a result, students in School 4 rated their school lower than students in School 2 with respect to teacher involvement in CAS. However, there is no significant mean difference among other schools in terms of teacher involvement in CAS. Also, the students from the other schools are all rated teacher involvement around 3 (neutral) on the Likert scale so most schools were perceived as equally poor in getting teachers involved in helping with CAS.

Lastly, there was a significant mean difference between schools in terms of how well schools build the community (e.g., parents and support organizations) for maintaining CAS at the p<.05 level: F (5,144) = 3.628, p = .004. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 (M = 3.11, SD = 0.76) was significantly different from the mean scores of School 1 (M = 4.00, SD = 0.63) and School 2 (M = 3.68, SD = 0.70).

As a result, students in School 4 rated their school lower than students in School 1 and School 2 with respect to community partners and parental involvement for maintaining CAS. However, there was no significant mean difference among other schools in terms of their community partners.

In addition to Likert scale items, some students' comments indicated their perceptions about how CAS was being implemented at their schools prior to the CAS workshop intervention. Some of these comments were:

"Our school creates free time for us to make CAS at summer school" (School 7 student), "The school allows us to create new activities about CAS" (School 2 student). These quotations show supports of the schools for students' doing CAS. Both indicated that these schools were encouraging students to do CAS.

Another comment was "Regular announcements about CAS are made and there are service related opportunities given to students" (School 1 student). Announcements make students to be more aware of CAS and opportunities ease students' CAS activities, so this comment shows the positive attitude of the school about CAS.

Furthermore, some students from school 6 stated that their school makes them stronger in teamwork and their school helps students to bond with their classmates. However, there was one negative comment on supports for CAS: "Opportunities for

CAS are enormous but monitoring and advising system is false and misleading to me" Although this comment was given by only one student from one school, prior research about CAS in Turkey (Perry, 2015) that used focus group data to elicit more details from students indicated similar attitudes across CAS programs in Turkey.

Student perspectives about CAS outcomes

This section of the survey examines what students believed they had gained with their CAS experiences and how they had developed prior to the CAS workshop intervention. The subscales are self-knowledge, showing commitment, and ethics of choices and actions. The subscales give more specific insights into students' perspectives about CAS outcomes. A one-way between subjects ANOVA was conducted to compare the 6 schools in terms of these subscales. (Note: Subscales for the other CAS outcomes were not used due to low Cronbach alphas, as described in Chapter 3.)

There was a significant mean difference between schools in terms of how well students think they have obtained self-knowledge, including awareness of their strengths and areas for growth at the $p<.05$ level: $F (5,149) = 7.246$, $p = .000$. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 ($M = 3.16$, $SD = 0.93$) was significantly different from the mean scores of School 1 ($M = 4.23$, $SD = 0.52$) and School 2 ($M = 4.03$, $SD = 0.64$). It also indicated that the mean score of the School 1 ($M = 4.23$, $SD = 0.52$) was significantly different from the mean scores of School 6 ($M = 3.38$, $SD = 0.63$). This indicates that School 4 had lower rates than school 1 and school 2, and that School 1 had higher rates than School 6 with respect to how well students were aware of their strengths and areas for growth. However, there is no significant mean difference among other schools in terms of their self-ratings of self-knowledge obtained from CAS.

There was also a significant mean difference between schools in terms of how well students show commitment and perseverance at the $p<.05$ level: $F(5,147) = 7.503$, p $= .000$. Post hoc comparisons with the Bonferonni test indicated that the mean score of the School 4 ($M = 3.0$, $SD = 0.96$) was significantly different from the mean scores of School 1 ($M = 4.23$, $SD = 0.66$), School 2 ($M = 3.85$, $SD = 0.75$) and School 7 ($M = 3.87$, $SD = 0.82$). It also indicated that the mean score of the School 10 ($M = 3.25$, $SD = 0.91$) was significantly different from the mean scores of School 1 ($M = 4.23$, $SD = 0.66$). As a result, students in School 4 rated their school lower than students in Schools 1, 2 and 7 and students in School 10 rated their school lower than students in School 1 with respect to how well students perceived themselves as showing commitment and perseverance to their CAS experiences. However, there is no significant mean difference among other schools in terms of perceived commitment.

Lastly, ANOVA showed a statistically significant mean difference between schools in terms of considering ethics of choices and actions at the $p<.05$ level: $F(5.10, 0.70) = 7.262$, $p = .001$. Post hoc comparisons with the Bonferonni test showed that the mean score of the School 4 ($M = 3.16$, $SD = 0.98$) was significantly different from the mean scores of School 1 ($M = 4.30$, $SD = 0.50$) and School 2 ($M = 4.10$, $SD = 0.68$). This indicates that scores of School 4 are lower than scores of School 1 and 2 in terms of ethics. However, there is no significant mean difference among other schools in terms of this subscale.

In addition to Likert scale items, there are some comments on outcomes of CAS that seemed important to students. Some of these comments are:

"As I took on new challenges, I do not only learn how to overcome them but also how to manage my time during my experiences" (School 1 Student).

"I am really glad to do different and important projects that were not done by other non-IB students" (School 2 student).

In addition, students from schools 7 and 6 commented that they learnt about listening to people around them and the importance of globalization and commitment. Overall, the pre-survey data indicate that how students feel supported in CAS in doing teamwork, improving their selves and being a social person, overcoming challenges by managing time, and becoming more aware of the world while learning the meaning of concepts like globalization.

The intervention: Workshop observations and feedback

Researcher observations of the workshop

The CAS workshop "Developing CAS in Turkey" by John Cannings was implemented in the Koç School library. It was developed based on recommendations by a team of CAS coordinators from four schools across Turkey and one researcher who had led prior research about CAS in Turkey (Martin, Tanyu, & Perry, 2016).

Participants were 9 schools from across Turkey (about 3-4 adults and 1-2 students from each school). The workshop consisted of 8 sessions; introduction, service and service learning in CAS, CAS and TOK, CAS projects, ethics and CAS, Reflection and the role of CAS interviews, student projects and a CAS alumnus reflects and future plans for improving CAS.

The workshop started with an introduction and "housekeeping" issues by Koç IBDP coordinator. The day started with a "world café" in which members of each school began at their own table, and teams tried to draw a diagram of where CAS fits in IBDP. After this activity, participants moved to new tables for Task 2, introduced themselves, discussed their diagram and "what does reflection mean?" After

discussion and sharing opinions, Cannings asked everyone (except the person with the pen) to move to a 3rd table and begin task 3. The task was discussing answers of the question "What does reflection mean?" and discussing "How CAS could be improved in your school?" After discussion, everybody returned to their original school group and shared what they had learnt from other groups.

After this task, they started Session 2 with a warm-up activity to emphasize the value of being focused and attentive. Then, there was a "fire-fighter video" that discussed the spirit in which service is given, afterwards the how and why of doing service was discussed by teachers and students followed by some questions about the process of making service valuable. Then, Cannings split the big group; students go off with a workshop assistant (a graduating MA student) to begin working collaboratively in the computer labs. At the beginning of the student session on CAS projects across schools, students introduced themselves to each other. Then, they started to think about new CAS activities. At the same time, adults planned CAS projects by subject-area.

After the lunch break, two school 1 students led a "human knot" ice-breaker activity which showed collaborative teamwork in process. Students noted that leadership emerged from each group. After the activity, students went with the workshop assistant to work collaboratively elsewhere. They continued to develop their CAS activity ideas. At this time, adults continued their CAS project ideas and created posters of their ideas in their subjects.

At the beginning of Session 3 about CAS and TOK, the adult participants shared their opinions about the aims of TOK and CAS and discussed some questions about types and sources of knowledge. At this time, students continued to work on their projects. Teachers brought with them examples of student reflections and they

discussed how students reflect on their emotion. Cannings asked "What strategies did you use when a project has failed?" Three teachers offered some suggestions.

Afterwards, in Session 4, students from each school presented a CAS project that they or other students at the school had done recently. Students were allowed to run through the project, and then the group asked questions at the end of each one. As closing for day 1, one student and one adult at each table stated quickly one positive thing that they learned that day.

The second day started with a warm up activity by School 2 students: True/False questions about scientific and cultural facts and old wives tales. Session 5 was about ethics and CAS. People shared some examples about ethics. Afterwards, they read a cleverly-written and fictional plane crash scenario from the workbook and discussed who deserved to live. Everybody wanted to save different people and they shared their emotional or analytical reasons. Next, schools were asked to develop a "code of ethics for CAS" and groups (composed of students and adults from the same schools) put up their "CAS Code of Ethics" – as posters on the wall. For Session 6, students went to the computer lab again to work on project planning in their own small groups (with members of each group from different schools). Students again focused on their projects, working across schools. They finished planning for new project ideas and started to prepare presentations. Since three groups had planned to do projects about web sites, they combined their projects and became one group. During this time, adults engaged in an in-depth discussion about reflection and the role of CAS interviews. Cannings asked questions to guide adults and they shared their opinions.

After lunch, for Session 7, students presented cross-school CAS project proposals. Projects were about: (1) informing parents in Turkish about CAS, (2) organizing a CAS education day, (3) teaching the locals English, to help the vendors improve

their interactions with tourists, and (4) building a website for students across schools in Turkey.

The last session of the workshop was about future plans for improving CAS. As the researcher who had helped to develop and coordinate the workshop, Robin Martin asked all participants for feedback. Then, Martin led participants in developing their own school improvement/action plans. Two teams left a little early, but other teams engaged deeply in discussing and developing the first stages of their plan. Afterwards, one person at each table stated one thing they could do to improve CAS. At the end of the workshop, Cannings gave closing impressions, thanked everyone for the opportunity, and participants left.

Participants' feedback about the workshop

Overall, participant feedback was very positive, and included feedback from 41 participants who stayed until the end of the workshop (a few had to leave early due to traffic issues in Istanbul). Ratings of both engagement and interest were all higher than 4 on a Likert scale of 1 to 5 (see Table 13 and Table 14). Session 6 which was about reflection and the role of CAS interviews and Session 3 which is about CAS and Theory of Knowledge had the lowest ratings in both interest and engagement of the participants (see Table 13 and Table 14). However, they are still around 4, but they were notably the times when the adult participants were especially tired and engaging in large group rather than small group discussions. In addition, Session 8 about future plans for improving CAS had the highest ratings in both interest and engagement of the participants. Of course, this was the session most fresh in their minds as they completed the feedback at the end of the workshop, and it was the session that brought the pieces of the workshop all together for planning their own next steps.

Table 13
 Participants' self-rated interest in the topic

	Mean	SD
Session1: Introduction	4.55	0.14
Session2: Service and Service Learning in CAS	4.64	0.62
Session3: CAS and TOK	4.15	1.07
Session4: CAS Projects	4.57	0.68
Session5: Ethics and CAS	4.58	0.63
Session6: Reflection and Role of CAS Interviews	4.15	0.84
Session7: Student Projects	4.66	0.62
Session8: Future Plans for Improving CAS	4.80	0.40

Table 14
 Participants' self-rated engagement in the activity

	Mean	SD
Session1: Introduction	4.58	0.63
Session2: Service and Service Learning in CAS	4.57	0.59
Session3: CAS and TOK	4.16	0.83
Session4: CAS Projects	4.08	0.88
Session5: Ethics and CAS	4.35	0.63
Session6: Reflection and Role of CAS Interviews	4.07	0.96
Session7: Student Projects	4.40	0.92
Session8: Future Plans for Improving CAS	4.75	0.60

The qualitative feedback about the workshop was perhaps even more informative about the participants' learning process than the Likert scale data.

For the introduction session (Session1), participants had generally positive comments in addition to a few negative comments. Participants were pleased with getting to know other people, communicating and collaborating with each other. Most of them thought positively about the world café and participants thought that it was good to start to think about CAS, with good guiding questions. Some participants stated their satisfaction about sharing information with other schools and identifying CAS problems. Some realized that problems of each school are almost the same. A

participant stated that they learnt different approaches to CAS in different schools and one of them thought that it was beneficial to identify their weaknesses. In addition, there were only two negative comments about this session; one participant stated that he was a bit shy at the beginning and the other one thought that the time allotted was not enough.

Session 2 about service and service learning in CAS had mostly all positive comments. Many participants indicated that they learnt more about service learning by sharing ideas with other people. Most of them were satisfied about doing projects and they liked posters from other schools. Some of them mentioned about the links between CAS and other subject areas. They indicated that they had the chance to think about the integration of CAS in different subject areas and the link between service learning and CAS. One participant indicated that the idea of adopting group projects into the service part of CAS was a really good idea. Another realized that he/she did not know about the difference between service and service learning until this session. The only negative comment about this session was form a participant who felt she did not get a chance to talk enough during the session.

Session 3 about CAS and Theory of Knowledge had mostly positive comments but some negative comments. Most of the positive comments were about the relation between CAS and TOK. Most participants indicated that they saw or learnt about the connection between CAS and TOK and were pleased to have the opportunity to think about integrating CAS and TOK. Some of them indicated their pleasure with creating projects. One of them stated that discussion about the common parts of TOK and CAS was good. The session had also several negative comments, mostly about its difficulty level. Some participants stated that they do not know very much about TOK so they could not contribute or they felt weak. Another commented that TOK is

always a challenge in itself, as well as one about the difficulty to understand the link between CAS and TOK without any example (although examples were given). Lastly one of the students thought that they were not involved enough in this session as students.

Session 4 about projects in Turkey had both positive comments and negative comments as well. Most of the positive comments were about the variety and excellence of projects and ideas. Most of the participants thought that projects were great and that it was great to see enthusiastic students and their participation. Participants indicated their satisfaction about gaining new ideas from the presentations of students and almost all of them liked the projects of students. Also, one participant stated that different projects shared by students were much more effective than teachers presenting them. Most of the negative comments were about length of time. Participants commented that presentations were too long so they had difficulty to follow

Comments on Session 5 which was about ethics and CAS were generally positive. However, there were a few negative comments. According to the comments of some participants, this session helped them to realize the importance of ethics in their CAS activities and helped them to start to think about ethical implications. Some participants stated that they liked the activity as it helped them to understand ethics well, to learn a variety of ideas and it promoted a quality discussion. One participant stated that ethics is a great topic that should be discussed in other workshops. Most of the negative comments are about the difficulty of the activity. According to some participants' comments, it was challenging to decide on who deserved to be alive and since it was an abstract activity, it was difficult to imagine and understand. Also, other negative comments were that discussion could be more interesting and the session could have been extended.

Session 6 which is about reflection and the role of CAS interviews had both positive and negative comments but the number of positive comments was double the number of negative ones. According to some positive comments, participants found this session practical and useful because they learnt the various types of reflection, they got a clear idea of reflection and they had ideas to improve their own practice and how to maximize student reflection through interviews. However, according to the negative comments, one participant did not think that it is practical and some stated that the videos were too long. Also another participant commented that the topic was not clear.

Session 7 which was about student projects had many positive comments in addition to few negative ones. Almost all of the positive comments were about the success of students' projects, their collaboration and new useful CAS project ideas. Participants commented that they were pleased to see enthusiastic students and their great jobs, with plausible projects ideas. Also students commented that they were happy about presenting ideas and listening to other students' projects. However, one student commented on not having a good presentation. One negative comment was that some of the projects did not seem practical and another one was that this could have been done in a more engaging way.

Finally, Session 8 that was about future plans for improving CAS and had only one negative comment and the other comments were all positive. Most of the positive comments were about participants' pleasure on starting to improve CAS in their school. Positive comments were: it encouraged them to overcome difficulties about implementing CAS, it was a great start for the school team for next year, looking at the action plan made them aware of broader school issues. Also, one participant stated that it was nice to see students who are really inclined to improve CAS in

Turkey. The only negative comment is that people need to come together more often to create future plans, which is really more of a suggestion than a negative comment.

In addition to comments on sessions, some general comments about the workshop were also offered. Most of the positive general comments are about the efficiency of the workshop and being with students during the workshop, such as:

> I think the workshop was a great opportunity for me for many reasons but I should appreciate your inclusion of students to this workshop. It is a very democratic way of learning and teaching in an IB school and organization.

Overall, negative comments were generally about the long duration of the workshop. Another was about the problems of sound and microphone; sound was problematic: microphone did not work and speakers buzzed at times.

Participants' CAS improvement plans

After the CAS workshop in İstanbul, participants developed their practical CAS improvement plans by considering weak and strong points of their CAS program. Six of the 9 participating workshop schools submitted their improvement plans, which were collected in September and several notices had to be sent to get those that were submitted.

Table 15 briefly summarizes how each plan covers, or not, the feature or criteria of CAS that prior research (Martin, Tanyu, & Perry, 2016) has shown to be important for improving the overall implementation of CAS in Turkey. The following scale was used to evaluate how well each plan covered the criteria:

0: Doesn't covered the criteria

1: Briefly touches the criteria

2: Give some attention the criteria to but not extensive

3: Extensive attention to the criteria

To make a plan feasible, it is important that plans not try to cover too many criteria but that the CAS teams evaluate what can feasibly be achieved for improving criteria within the constraints and challenges faced in each unique school setting.

Table 15
Improving CAS: The depth of features covered by each plan

School/Features	School 1	School 2	School 4	School 6	School 7	School 9
Reflections	3	3	3	1	3	1
Monitoring	0	0	1	1	1	0
Feedback	0	0	2	0	0	1
Curriculum Coherence	3	2	2	3	1	1
Teacher Involvement	1	1	1	2	1	1
Building Community	3	1	3	1	2	0
Service and Service Learning	0	1	1	0	0	1
Other Issues	0	0	0	1	0	0

Participating schools developed their own CAS improvement plan according to their schools' strengths and weaknesses by working with their CAS school team. By these plans, the researcher can monitor the development of schools about CAS about 7 months after the workshop. So subtracting some time for summer holidays, this gave schools 5-6 months of working to implement their plans.

The participating schools had different plans with respect to differing ways to improve reflection. The overall foci of improving reflection were through attention to the type, variety and quality of reflection, along with one plan that aimed to improve

teachers' support of the reflection process through the training of CAS advisors. School 1, School 4 and School 7 aimed to improve type of reflections that students can apply. School 9 aimed to extend the reflection to connect with TOK. In addition to improving reflection types, School 7 also aimed to teach students how to reflect. Only School 1 aimed to emphasize the importance of reflection, and only school 4 aimed to train CAS advisors about reflection. School 2 planned to share samples of previous journals with students through CAS Moodle system, CAS booklet and hard copies of previous students' work. They also aimed to invite a former CAS student who demonstrated outstanding performance in a project to school to present his/her experience to new CAS students. Lastly, School 6 planned to use online reflection to have students share their experiences and get students' ideas about improving CAS.

School 4, School 6 and School 7 had targets to improve monitoring; how CAS projects are selected, goals are set, and experiences are monitored. School 4 planned to schedule meeting to see how well the students get organized. School 6 planned to get students to share their progress so far. Also, School 7 aimed to ensure that students achieve all learning outcomes by having CAS experiences by checking their reflections and proposal forms.

For the feedback as another feature, only two schools had some plans to improve the processes for how teachers give feedback to help students in initiating, planning, and follow-through with CAS projects or experiences. School 4 planned to set regular advisor-student meeting so that the advisor can comment on the process face to face. In addition, School 9 aimed to train IB teachers about giving feedback CAS but they did not indicate a specific plan for this aim.

Participating schools had a variety of plans about improving curriculum coherence. All schools aimed to improve the links between CAS and TOK, or other academic

subjects. To enable stronger subject links, School 1 planned to use IB unit planners and aimed to get support and advice for subject areas from CAS and TOK coordinators. School 2 planned to get CAS supervisors to try to integrate new projects with people, associations and non-governmental organizations from different social status to mate the students gain different TOK perspectives. School 4 planned to have all the teachers to consider any CAS experience related with their course. Like School 4, School 9 also planned to arrange a meeting with teachers about making links by CAS, TOK, service learning and their subject areas. School 6 planned to get students to reflect on their CAS activities, make links to TOK and share experiences with grade 10 students. In addition they planned to get grade 12 students to present to grade 11 students about the links to CAS learning outcomes. Lastly, they planned to get students to express what they completed during their CAS activities to find links between subjects and CAS.

For the teacher involvement feature which is getting the whole teaching team more involved in helping with CAS, participating schools had different plans. School 1 planned to provide information on CAS to teacher and as for volunteers. School 2 planned to make announcements and invite other subject teachers to CAS activities in general staff meetings. School 4 aimed to train CAS advisors teachers about using ManageBac. Plans of School 6 were identifying which teachers will be responsible for CAS activities and assigning students to teachers according to activities. School 7 aimed to explain the roles of supervisors and get all teachers to be more involved in CAS. In addition, School 9 planned to create a policy for finding CAS advisors.

Schools had variety of improvement plans as well for the building community feature of CAS which is improving parental and community understanding of CAS and including outreach to community partners. In accordance with this purpose,

School 1 planned to arrange CAS introduction meetings with parents, to ask support from parents about CAS and to make active involvement of parents on ManageBac. Also they planned to arrange project fairs and design new CAS logo. School 2 aimed to reach volunteer parents for various CAS activities on teacher-parent meeting days. School 4 aimed to have a CAS page within the school website, to organize a Market Place where students' CAS work will be displayed and to inform some foundations about the importance of CAS. School 6 has also aimed to have parents more involved in CAS but they did not indicate a specific plan for this aim. Lastly, School 7 planned to update their school's website to include information about CAS and they aimed to prepare a CAS booklet for parents.

School 2, School 4 and School 9 had plans about service and service learning; strategies for improving the service learning aspect of CAS. School 2 planned to give students the opportunity to meet with people who need service from different communities, neighborhood and environment. School 4 aimed to get advisor teachers to help their students in improving strategies for improving the service learning. In addition, School 9 planned to introduce its own service program which covers for non-IB students in the basis of CAS philosophy.

Lastly, School 6 had a different improvement plan about other issues except the eight subscales. They planned to introduce Grade 11 students to CAS by CAS handbook and yearly plan of activities. (See Appendix D for the table of participant's CAS improvement plans.)

Summaries and feedbacks of two follow-up webinars

First follow-up webinar

To help schools to develop their CAS program, the first follow-up webinar was conducted by using Google Hangouts. Eight participants (all adults) from five

schools participated in this first webinar. The structure of the webinar was prepared by the workshop leader John Cannings according to needs of the schools and topics that were covered in the İstanbul workshop. The webinar included seven sections which are strategies for developing the quality of reflection, curriculum coherence, building communities, increasing teacher involvement in CAS, service learning, student engagement, and risk management. The agenda was sent to participants before the webinar and all items were covered in details during the webinar. Participants shared their opinions and asked their questions. After everybody shared their opinions and asked questions, Cannings ended the webinar. Hence, participants got some ideas from other schools and tried to find answers to their questions. (See Appendix E for the details).

After the webinar, participants answered questions of the webinar feedback form (see Appendix F) and their responses are mostly all positive (see Appendix G for detailed responses). All participants found the content of the webinar helpful and most of them found hearing other schools' ideas on CAS beneficial. The few negative comments were on technological glitches. Finally, participants offered some suggestions for improving the content or delivery of such follow-up sessions, and the workshop coordinators agreed that getting students more involved again in the second webinar would be beneficial to the participating schools' ongoing CAS improvement processes.

Second follow-up webinar

The second follow-up webinar was also conducted by using Google Hangouts. Six teachers and 5 students from four schools participated in this webinar. Before the webinar, participating students and teachers had been requested to prepare an oral progress report. Schools talked about changes for CAS after the summer workshop

and how they can push CAS further. During the webinar, Cannings asked guiding questions to learn more details about their CAS progress, especially directing the questions toward the students. Schools generally talked about their changes like using different forms of reflection, increasing the number of CAS advisors, students organizing parent meetings to try to inform them more about CAS, having a CAS magazine, CAS website, or CAS blog, introducing and maintaining interests in CAS more carefully by presentations and orientations, CAS advertisements, and CAS panels. At the end of the webinar, Cannings concluded the webinar, thanked all participants and ended the webinar (see Appendix E for the details).

After the second webinar, participants again answered questions of the webinar feedback form (see Appendix F) and their responses were mostly positive (see Appendix G). All participants found the content and structure of the webinar helpful and 6 participants stated it was useful to hear other schools' improvements and changes from the perspective of both teachers and students. All negative comments were about technology. Finally, participants had 5 suggestions for improving the content or delivery of such follow-up sessions, such as organizing more webinars similar to that, getting participant schools to form content and give suggestions about the content and organizing webinar hours in common free hours.

Summary of actions taken in each school

CAS coordinators of Schools 1, 2, 4, 6, 7 and 9 reported their answers to the follow-up survey for CAS coordinators about changes that had been made over the 7 months following the initial workshop (See Appendix H). The survey included open item questions about their improvement plans, what improvements that they made to the schools by using the plans, as well as what challenges they faced. Their answers of these questions were summarized in this section, which overall indicative of schools

are taking the first steps and some large strides toward improving their overall CAS implementation.

According to answers of School 1, the school has completed its plans about promoting CAS in/outside of the school, teacher involvement, building community with parents. However, the CAS team intends to complete the plans about reflections, CAS celebration, curriculum coherence and CAS/TOK links next year. For the steps that the school were unable to complete, they faced some challenges. They reported the challenge for reflection plans was that not enough practice was given to the students in their courses and CAS interview time was usually not enough to go over all students' reflections and how to reflect. Challenges that prevent a CAS celebration event as well as making CAS/TOK links were about being busy with other tasks and heavy work load. Lastly, School 1 stated that students prepared CAS web blog and CAS video to publish through social media.

The CAS Coordinator at School 2 reported the team had completed its improvement plans for face-to-face interviews with students, along with providing the parents more engaged and involved cooperation with the other departments. However, while ideas are still in the development stage, the CAS team needs more preparations for organizing CAS fairs. It was indicated that most difficult part was getting students to upload journals and fill out reflection forms on time and the CAS program does not have any sanction (nor likely any rewards or opportunities either, though that was not mentioned) for this situation except warning.

According to answers of School 4, they have made very large strides in addressing a number of issues, starting with strengthening the engagement of students in the CAS program by increasing use of ManageBac. In addition, it is claimed that they have also consolidated their resources the curriculum framework for supporting students

to increase engagement in CAS by providing CAS advisers time to meet with their students and to training them for the proper use of Managebac. Furthermore, they also claimed to have placed greater emphasis on reflection in CAS and all areas of IBDP by getting CAS advisors being trained in different forms of reflection and getting them to emphasize reflection when they are in their student meetings. The other plan that School 4 CAS coordinator stated they had completed that promoting international mindedness by becoming in the process of recognizing and celebrating internationalism in their curriculum, digital screen and a whole range of long prevailing club activities. The CAS coordinator indicated that they intend to be able to celebrate student achievement in a timely manner, student growth through the CAS program and strengthen the engagement of students to CAS program as fundamental to their academic success and lifelong learning for next years. Unlike the other schools in the sample, this school recently hired a new CAS coordinator in 2015. The CAS coordinator indicated that after the workshop she became to give a lot importance on developing CAS and three other teachers helped her by implementing these plans and. As for its challenges, School 4 is still trying to have the adviser teachers to meet their student cohort during class time, to meet their 11th graders more often than 2 interviews suggested, and to reduce the number of students per adviser by increasing the number of advisers next year. According to the CAS coordinator who completed the survey, the biggest perceived challenges are the external ones in which "the national numerical bias grading system hinders genuine engagement of all IB students", so most students only want to participate in the CAS program if they are graded. Lastly, School 4 maintained two other activities that helped to support the improvement of CAS: 1) continuing with Community Service Program with their 10th graders and 2) organizing a symposium where state and private schools participated.

Like School 4, School 6 also seemed exceptionally fruitful in making a number of improvements to CAS. The School 6 coordinator indicated that the CAS team had completed its improvement plans of creating a new CAS wall by putting up monthly posters of various important themes to make students, teachers and parents aware of local and international issues, having a CAS Panel by getting 12th grade students to talk about their experiences and portfolios, adding an IB parent day and Duke of Edinburgh Awards by training students about the requirements. It was stated that the CAS team will continue to develop all these plans next year, presumably fine-tuning what they have begun but it was not stated explicitly how. Challenges faced by School 6 were mostly about budgeting issues. The CAS team also had difficulty to send students for outdoor events because of political issues in Turkey (likely related to the attempted coup in July 2016) and restraints by the Ministry of Education. As for other activities or workshops that helped to support the improvement of CAS, Cannings gave an extra in-school cluster workshop at their school on the three DP core subjects for all teachers, about how to integrate these into the program more successfully, and also how other subject areas can link more commonly with these core topics. In addition, their CAS Coordinator completed a face-to-face workshop regarding the new CAS guide, and their DP Coordinator recently completed a Teaching and Learning workshop that involved incorporating CAS into the school ethos and teaching practicum. Thus, School 6 had positioned itself to really focus, beyond only the CAS team workshop, to improving its overall CAS culture this year.

According to the responses of the School 7 coordinator, the CAS team completed to prepare guiding questions for reflection by talking with the sponsoring club teachers and getting students to share their CAS experiences in their club hours. Challenges faced in School 7 were that not all club teachers get students to do their reflections in

the club hour and some were not wanting to spare their time for the reflection session. Also, as other activities or workshops that helped to support the improvement of CAS, the CAS coordinator of School 7 attended two CAS workshops in Amsterdam, thus also giving extra support in 2016 to its overall school-wide improvement of CAS.

Lastly, School 9 indicated that its CAS team had started to work on a web page about CAS and they intend to do some changes in the school CAS handbook later this year. They did not state any challenges that they faced not any other activity or workshop they participate in to support the improvement of CAS.

Overall, the responses across 6 participating schools showed that 2 schools appeared exceptionally energized toward making a large number of improvements to CAS, while 3 were strong in their overall efforts, and only 1 school made relatively few strides and had other constraints not noted in the final questionnaire that prevented the CAS team from following the momentum of the summer CAS workshop. To sum up, most important new things schools added their CAS programs can be increasing engagement of students to CAS by increasing the use of ManageBac, organizing CAS panels or CAS panels, getting more parents to involve in CAS and increasing the quality and variety of CAS reflection. However they had some challenges by adding some changes into their CAS program like cannot managing time well because of heavy work load, national grading and examination system and budgeting.

Perspectives 7 months after the workshop

After 7 months of implementing their CAS improvement plans, students and teachers from schools participated in the CAS post-survey. For Section 2, Section 3 and Section 4 of post-survey, descriptive statistics (mean, standard deviation, minimum

and maximum values) were calculated for each common subscale of both pre- and post-survey in this section. The following sections give paired sample t-test results for matched 42 students and although slight increased means of subscales were evidenced, no significant differences were found by the t-test.

Descriptive statistics about sub-scales of student surveys

Section 2 of the student survey was about perspectives about how the school culture supports CAS based all 84 students who completed the post- survey across 4 schools (see Table 11). For its mission and vision, curriculum integration, feedback, and teacher involvement subscales, descriptive results were reported (See Table 16). Just like the pre-survey, for all of these subscales, minimum score is 1 and maximum score is 5 for the post-survey. Also, the following section will show that none of the mean differences shown in this section are significant; however, the extent and directionality of the differences across most subscales are worth noting and briefly summarized in this section.

Table 16
Descriptive statistics about sub-scales of student surveys

Subscales	Pre-Survey Mean	Pre-Survey Standard Deviation	Post-Survey Mean	Post-Survey Standard Deviation
Section 2:Mission and Vision	3.42	0.89	3.65	0.72
Section 2:Curriculum Integration	3.36	0.92	3.38	0.81
Section 2: Feedback	3.38	0.99	3.51	0.82
Section 2: Teacher Involvement	3.15	1.02	3.20	0.95
Section 3: Reflection	3.20	0.65	3.12	0.75
Section 3: Monitoring	3.31	0.90	3.40	0.92

Table 16 (cont'd)
Descriptive statistics about sub-scales of student surveys

Section 3: Feedback	3.15	0.91	3.20	0.65
Section 3: CAS-Curriculum Coherence	3.14	0.83	3.15	0.92
Section 3: Teacher Involvement	3.23	0.85	3.13	1.02
Section 3: Building Community	3.43	0.83	3.65	0.78
Section 4: Self-knowledge	3.56	0.87	3.69	0.91
Section 4: Commitment	3.47	0.94	3.59	0.85
Section 4: Ethics	3.64	0.92	3.74	0.87

Results indicate that all subscale scores of post-survey are higher than pre-survey for Section 2. Post-survey scores for curriculum integration subscale (*M=3.38, SD=0.81*) are slightly higher than pre-survey scores (*M=3.36, SD=0.92*). Feedback scores of post-survey (*M=3.51, SD=0.82*) are also higher than feedback scores of pre-survey (*M=3.38, SD=0.99*). Besides, post-survey scores for teacher involvement subscale (*M=3.20, SD=0.95*) are higher than pre-survey scores for this subscale (*M=3.15, SD=1.02*). Lastly, mission and vision scores of post-survey (*M=3.65, SD=0.72*) are higher than mission and vision scores of pre-survey (*M=3.42, SD=0.89*). For all of these 5-point Likert subscales, as with the pre-survey, the minimum score was 1 and maximum score was 5. In addition to Likert items, Section 2 has an open-ended question which asks other aspects of schools that create a positive learning environment for supporting CAS. The post-survey comments overall shed little light (shadows only!) on any significant changes that had been made in the schools. At one school, a student claimed:

> School arranges places for us to go in order to have a better service experience. We also have clubs and this helps us experience different action activities. Also they encourage us to attend creative activities such as MUN and that expands our holistic view. (School 6 student)

This comment shows the importance of schools' support to help students choose more effective CAS experiences.

One of the School 1 students has a negative comment on that issue. He/ She indicated that they receive weekly CAS mails and they can see lots of CAS opportunities on ManageBac. However, CAS supervision was quite weak in 11th grade thus most students have not completed the CAS requirements in their 12th year. This comment shows the importance of a balanced supervision for both 11th and 12th grade students, and that such balance has not been reached in the school.

Section 3 was about perspectives about how well CAS is implemented. Pre and post-survey common subscales of Section 3 are reflection, monitoring, feedback, coherence, teacher involvement, and building community. Descriptive statistics were calculated for each common subscale of the pre- and post-surveys.

Post-survey scores are higher than pre-survey scores for four subscales and lower for two subscales for this section. Post-survey scores of monitoring subscale (*M=3.40, SD=0.92*) are greater than pre-survey scores of this subscale (*M=3.31, SD=0.90*). Feedback scores of post-survey (*M=3.20, SD=0.65*) are also higher than feedback scores of pre-survey (*M=3.15, SD=0.91*). Coherence scores of post-survey (*M=3.15, SD=0.92*) are slightly higher than coherence scores of pre-survey (*M=3.14, SD=0.83*).Also, post-survey scores of building community (*M=3.65, SD=0.78*) are higher than pre-survey results of this subscale (*M=3.43, SD=0.83*). However, there is a decrease on reflection and teacher involvement subscales. Post-survey scores of reflection (*M=3.12, SD=0.75*) are less than pre-survey scores of this subscale

(*M=3.20, SD=0.65*). Similarly, post-survey scores of teacher involvement subscale (*M=3.13, SD=1.02*) are less than pre-survey scores of this subscale (*M=3.23, SD=0.85*).

For the reflection subscale of pre-survey, the minimum score is 1.57 and the maximum score is 4.71. In contrast, the post-survey scores showed a greater range with 1.29 as the minimum score and 5 as the maximum score. Furthermore, the feedback subscale indicated slightly less range of post-survey scores with 1.57 as the minimum score and 4.57 as the maximum score. For all other subscales, the minimum value is 1 and the maximum value is 5 for both pre and post-surveys.

In addition to Likert items, Section 3 has an open-ended question which asks other supports of CAS at schools. Only 3 students had a comment on this question, all 3 were from School 6, and all mentioned their teachers, CAS coordinators and IB coordinators in a positive way. These comments show the importance of teachers' supports for students. Students indicated that their CAS coordinators give many opportunities to CAS. They also indicated that their subject teachers are helpful about CAS, their CAS and IB coordinators help them to explore the depth of CAS and encourage them to gain new experiences and new gains in life.

Lastly, Section 4 of the surveys was about perspectives of students about CAS outcomes. Descriptive statistics were calculated for common subscales of pre- and post-survey for this section. These common subscales are self-knowledge, commitment and ethics.

Results indicated that post-survey scores of all subscales of Section 4 are higher than pre-survey scores. The self-knowledge subscale has higher post-survey scores (*M=3.69, SD=0.91*) than the pre-survey (*M=3.56, SD=0.87*). Post-survey scores of

commitment (*M=3.59, SD=0.85*) are also higher than pre-survey results of this subscale (*M=3.47, SD=0.94*). Lastly, post-survey scores of the ethics subscale (*M=3.74, SD=0.87*) are greater than pre-survey results of this subscale (*M=3.64, SD=0.92*). For all of these subscales, a minimum score of 1 and maximum score of 5 are noted for both pre and post-survey.

In addition to Likert items, Section 4 has an open-ended question which other outcomes of CAS that seem important to students. Some School 6 and School 7 students wrote a range of comments on this question about improving themselves personally, helping the community, and preparing for future jobs with attention to skills and values that are being developed. These comments were:

"I especially find learning about new individuals through CAS very important." (School 6 student)

"CAS builds a better community. If you want to change the world, start from yourself. CAS allows you to do so." (School 7 student)

> CAS expands my way of looking at life. This is a great deal for me since I want to help others throughout my future life. Helping those in need, by exploring my strength is a crucial thing that I learned from CAS. Because by this way, I believe I can become a better person. (School 6 student)

> CAS leads students to choose the best job for them in the future according to their skills. CAS helps a lot on finding out the values of a person as that person becomes adult, so prefers many right choices in his/her life. (School 7 student)

Also, one of the School 6 students indicated that challenges and activities that improve his/her weaknesses are important outcomes. It can be seen the effect of CAS for teaching students about real life and helping them to be aware of themselves from these comments.

However there is a negative comment from one of the School 6 students. He/She indicated they should be able to participate in more than one club but that there are not enough events.

Descriptive statistics about sub-scales of teacher surveys

While only 11 teachers responded to the post-survey in Schools 2, 4, 6, 7 this was still enough to run some simple statistics about the teachers' perspectives after observing their schools in the wake of their CAS improvement plans (See Table17). As with the student surveys, when matching teachers to look for significant change from pre- to post-surveys, the following section will again show that no significance was found, but it still seems worthwhile to examine the direction that differences are tending toward.

Table 17
Descriptive statistics about sub-scales of teacher surveys

Subscales	Pre-Survey Mean	Pre-Survey Standard Deviation	Post-Survey Mean	Post-Survey Standard Deviation
Section 2:Curriculum Integration	3.88	0.62	3.75	0.59
Section 2: Feedback	4.31	0.59	4.03	0.60
Section 2: Teacher Involvement	4.24	0.67	3.96	0.67
Section 3: Reflection	3.59	0.64	3.81	0.48
Section 3: Feedback	3.91	0.74	4.06	0.53
Section 3: CAS-Curriculum Coherence	3.26	0.82	3.34	0.85
Section 3: Teacher Involvement	3.41	0.99	3.27	0.76
Section 3: Building Community	3.53	0.72	3.63	0.85

Table 17 (cont'd)
Descriptive statistics about sub-scales of teacher surveys

Section 4: Self-knowledge	3.83	0.70	3.90	0.63
Section 4: Skills	3.46	0.71	3.57	0.87
Section 4: Collaboration	3.76	0.63	4.03	0.60
Section 4: Global	3.49	0.80	3.84	0.67
Section 4: Ethics	3.71	0.70	3.90	0.53

Section 2 of the teacher survey was about perspectives of the participant teachers about how the school culture supports CAS. For this section, descriptive statistics were calculated for each common subscale of both pre- and post-survey which are curriculum integration, feedback, and teacher involvement. Results stated that all subscales of Section 2 have lower post-survey scores than pre-survey scores.

Post-survey scores of curriculum integration (*M=3.75, SD=0.59*) is less than pre-survey scores of this subscale (*M=3.88, SD=0.62*), though with such a small number of teachers participating a significant difference was not possible. Feedback subscale has also less post-survey scores (*M=4.03, SD=0.60*) than pre-survey scores (*M=4.31, SD=0.59*). Lastly, teacher involvement post-survey scores (*M=3.96, SD=0.67*) are less than pre-survey scores of this subscale (*M=4.24, SD=0.68*).

In addition to Likert items, Section 2 has an open-ended question which asks other aspects of schools that create a positive learning environment for supporting CAS. One comment here was surprisingly lengthy:

> Our mission at our school is to educate students who benefit their society, integrate their identity with their cultural heritage, learn throughout life, through their own experiences, know the importance of learning other

languages, embrace cultural and ethical values, nurture principles, self-confident and successful self-view and think globally. The aim of CAS is to create a better and more peaceful world. CAS helps to develop open-mindedness, lifelong learning, discovery and self-reliance. It also encourages the development of new skills such as creative, physical and social skills on many levels. CAS inspires a sense of responsibility toward all members of the community. (School 6 teacher)

This comment clearly shows that the school is aware of the effects of CAS on students' development in many areas and its aims, so the teacher identified their CAS mission according to areas that students need to develop.

Another teacher stated, "Our school provides many different social activities within school for students" (School 2 teacher). However, one of School 4 teachers indicated that there is too much stress about trying to joint curriculum and they do not have enough time to do it.

Descriptive statistics were also calculated for common subscales of Section 3 of pre and post-survey. The common subscales validated in both the pre- and post- surveys are reflection, feedback, coherence, teacher involvement, and building community. It is seen from the results that all subscales of Section 3 except teacher involvement are higher in the post-survey scores, though not significantly different.

Post-survey mean score of reflection (*M=3.81, SD=0.48*) is greater than pre-survey scores of it (*M=3.59, SD=0.64*). The feedback subscale of post-survey has also greater scores (*M=4.06, SD=0.53*) than feedback subscale of pre-survey (*M=3.91, SD=0.74*). Post-survey scores of coherence (*M=3.34, SD=0.85*) are higher than pre-survey scores of this subscale (*M=3.26, SD=0.82*). In addition, building community subscale has greater post-survey scores (*M=3.63, SD=0.85*) than pre-survey scores (*M=3.53, SD=0.72*). However, teacher involvement subscale has lower post-survey scores (*M=3.27, SD=0.76*) than pre-survey scores (*M=3.41, SD=0.99*).

In addition to Likert items, Section 3 has an open-ended question which asks other supports of CAS at schools. However, there is not any comment on this question.

Lastly, common pre- and post-survey subscales of Section 4 are self-knowledge, skills, collaboration, global, and ethics. Descriptive statistics were calculated for these subscales. Results indicate that post-survey scores of all Section 4 subscales are higher than pre-survey scores.

Post-survey scores of self-knowledge subscale ($M=3.90, SD=0.63$) are higher than pre-survey scores of it ($M=3.83, SD=0.70$). Skills subscale has also greater post-survey scores ($M=3.57, SD=0.87$) than pre-survey scores ($M=3.46, SD=0.71$). Collaboration subscale has greater post-survey scores ($M=4.03, SD=0.60$) than pre-survey scores ($M=3.76, SD=0.63$). In addition, post-survey scores of global subscale ($M=3.84, SD=0.67$) are higher than pre-survey scores of this subscale ($M=3.49, SD=0.80$). Lastly, post-survey scores of ethics subscale ($M=3.90, SD=0.53$) is greater than pre-survey scores of it ($M=3.71, SD=0.70$).

In addition to Likert items, Section 4 has an open-ended question which other outcomes of CAS that seem important to students. Again, a comment from a teacher at School 6 was quite extensive:

> We aim to develop students who are reflective thinkers.
> They understand their own strengths and limitations identify
> goals and devise strategies for personal growth, willing to
> accept new challenges and new roles, aware of themselves
> as members of communities with responsibilities towards
> each other and the environment, active participants in
> sustained, collaborative projects, balanced. They enjoy and
> find significance in a range of activities involving
> intellectual, physical, creative and emotional experiences.
> (School 6 teacher)

A teacher from School 4 indicated that they work together on CAS activities with students so they get change to focus on less academic activities.

Also, teachers of School 2 and School 4 indicated that increasing self-esteem and self-confidence and increasing self-awareness are some of the outcomes of CAS.

Differences after implementing CAS improvement plans

Unfortunately, a majority of the students who participated in the post-survey was not same as the pre-survey participant students. For this reason, students were matched according to their similar demographic issues. All of these paired students are in the same school and same gender (See Appendix I for matching details). To compare pre- and post-survey scores for evaluating whether professional development elicited a statistically significant difference on schools culture, supports of CAS and outcomes of CAS, Paired Sample T-Test was conducted for the matched 42 students and non-parametric form of Paired Sample T-Test (Wilcoxon signed-rank test) was conducted for the 6 teachers who participated in both pre and post-survey. These tests were conducted for common pre- and post-survey subscales of both the student and teacher surveys.

Demographics of matched students

To compare pre- and post-survey results, 42 students were matched. There are 5 students from School 1, 16 students from School 2, 4 students from School 4, 9 students from School 6 and 8 students from School 7. 71.4% (n=30) of these students are female and 28.6% (n=12) are male. In pre-survey, the IB school years ranged from 1 to 12 years and in post-survey it ranged from 1 to 10 years.

In both pre and post-survey, the most preferred university major that students want to study is sciences (physics, biology or chemistry) with 30.9% (pre-survey) and 33.3% (post-survey). The other popular subjects are arts, music or drama (19% of pre-survey participants, 21.4% of post-survey participants) and social sciences (21.4% of pre-survey participants, 19% of post-survey participants). And exactly 16.6% of both

pre and post-survey participant students are uncertain about their university major or did not respond to this question. Interdisciplinary studies, humanity and mathematics are the least preferable choices. Only 3 students from pre-survey and 1 student from post-survey chose interdisciplinary studies, 1 student from pre-survey and 3 students from post-survey chose humanity and 1 student from both pre and post-survey chose mathematics as a university major that they want to study. Again, students also wrote some other university majors such as law, business management, engineering, architecture and medicine and surgery. In addition, information about long term career goals and interest out of the school before IBDP of participant students were very similar to what was found in pre-survey

Demographics of teachers in both pre/post surveys

There are 6 teachers who did both pre- and post-survey from three different schools. There is 1 teacher from School 4, 2 teachers from School 2, and 3 teachers from School 7. Only one of these teachers is male and others are female. In the pre-survey year, two of these teachers were teaching humanities, one was teaching social sciences and three were teaching sciences but in the post-survey year one of the social science teachers started to teach interdisciplinary studies.

In the pre-survey, they reported in the pre-survey that number of the year that they work as a CAS advisor or coordinators ranged from 1 to 7 years and average number of years is 3.33 (SD=2.25). They had indicated that number of their advising or supervising students ranged from 15 to 419. Since post-survey is one year after the pre-survey, their CAS advisor or coordinators years ranged from 2 to 8 years. In the post-survey they indicated that that number of their advising or supervising students ranged from 6 to 100. In addition, information about their advice as an extra-curricular area and describing their interests outside of school of participant teachers were very similar to what was found in pre-survey.

Differences about how the school culture supports CAS after implementing CAS improvement plans

No significance found between student pre and post surveys

Section 2 of the student survey was analyzed to see if there if workshop and webinars make a difference on improving the overall aspects of schools culture that relate with CAS.

Subscales of Section 2 are mission and vision, curriculum integration, feedback, teacher involvement and building community. Analysis showed that there is no significant difference between pre- and post-survey scores of any of these subscales.

There is no correlation between pre and post survey scores of how students perceive mission and vision shown through clubs and school activities that match with CAS aims, p=0.230. Also, there is no significant difference in the mission and vision scores for pre-survey (M=3.56, SD=0.75) and post-survey (M=3.57, SD=0.75) conditions; t(39)=-0.41, p=0.967.

Analysis showed that there is a correlation between pre and post survey how students perceive integration of academic curricula across subjects, or made practical, p=0.008. However, there is no statistically significant difference in the curriculum integration scores for pre-survey (M=3.35, SD=0.82) and post-survey (M=3.30, SD=0.91); t(40)=0.329, p=0.774.

Similarly, it is seen from the analysis that there is no correlation between pre and post-survey scores of how students perceived the value of feedback from teachers overall. Also, there is no significant difference in feedback scores for pre-survey (M=3.33, SD=0.66) and post-survey (M=3.62, SD=0.78); t(39)=-2.014, p=0.051.

Pre- and post-survey scores of teacher involvement in student-centered learning and learning outside classroom has a correlation, p=0.010. However, there is no

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statistically significant difference in the teacher involvement scores for pre-survey (M=3.40, SD=0.88) and post-survey (M=3.29, SD=1.00); t(38)=0.619, p=0.540.

Finally, there is no correlation between pre- and post-survey scores of how students perceive the relations between their schools and the local community, p=0.108. Besides, there is no significant mean difference in the building community scores for pre-survey (M=3.60, SD=0.87) and post-survey (M=3.55, SD=0.84); t(39)=0.301, p=0.765.

Teacher perspectives show no change, except one in negative direction

Section 2 of the teacher survey was analyzed to see if there if the CAS workshop and webinars make a difference on each school's culture that relates most closely with CAS. Subscales of this section are mission and vision, curriculum integration and feedback. The test showed that there is a significant difference on the feedback subscale which is a decrease and there is no significant difference on others.

A Wilcoxon signed-rank test showed that there is no statistically significant difference between pre- and post-survey scores in how teachers perceive mission and vision shown through clubs and school activities that match with CAS aims (*Z = -0.105, p = 0.916*). Indeed, median mission and vision score rating is 4.5 for both pre- and post-survey.

In addition, pre- and post-survey scores of how teachers perceive integration of academic curricula across subjects, or made practical has no significant difference (*Z = -1.414, p = 0.157*). Median curriculum integration score rating is 4.37 for pre-survey and 4.12 for post-survey.

However, the Wilcoxon test showed a statistically significant difference between pre- and post-survey scores in how teachers perceive the value of giving feedback to

students ($Z = -2.041, p = 0.041$). Unexpectedly, there is a significant decrease on teachers' perceptions of their use of feedback to students. Median curriculum integration score rating is 4.62 for pre-survey and 3.87 for post-survey.

Differences about how CAS is implemented after implementing CAS improvement plans

Student perspectives do not change concerning how CAS is implemented

Section 3 of student survey was about supports for CAS and subscales of this section are reflection, feedback, coherence, teacher involvement and building community. Analysis showed that there is no significant difference between pre and post-survey scores of any of these subscales.

Pre and post-survey scores of how well CAS supports students' CAS reflection process have no correlation, p=0.228. Also, there is no significant mean difference in the reflection scores for pre-survey (M=3.32, SD=0.63) and post-survey (M=3.13, SD=0.72); t(41)=1.451, p=0.154.

Besides, there is no correlation between pre and post-survey scores of how well students perceived the schools to be giving feedback about CAS choices, reflection, etc., p=0.758. There is no significant mean difference in the feedback scores for pre-survey (M=3.17, SD=0.68) and post-survey (M=3.16, SD=0.87); t(40)=0.062, p=0.951.

There is no correlation between pre and post-survey scores of how well students perceived schools as supporting curriculum coherence with respect to the integration of CAS, p=0.171. Also, there is no significant mean difference in the coherence scores for pre-survey (M=3.22, SD=0.77) and post-survey (M=3.13, SD=0.94); t(41)=1.511, p=0.612.

Pre and post-survey scores of how well students perceived the schools to have teacher involvement in CAS have no correlation, p=0.235. Also, there is no significant mean difference in the teacher involvement scores for pre-survey (M=3.29, SD=0.84) and post-survey (M=3.08, SD=0.87); t(38)=1.216, p=0.231.

Lastly, there is a correlation between pre and post-survey scores of how well schools build the community (e.g., parents and support organizations) for maintaining CAS, p=0.036. However, there is no significant mean difference in the building community scores for pre-survey (M=3.56, SD=0.81) and post-survey (M=3.60, SD=0.76); t(39)=-0.261, p=0.796.

Teacher perspectives do not change concerning how CAS is implemented

Section 3 of teacher survey was about supports for CAS and subscales of this section are feedback and coherence. Wilcoxon signed-rank test showed that professional development did not elicit a significant change in feedback and coherence.

There is no statistically significant difference between pre and post-survey scores in how well teachers believe they give feedback to students about CAS choices, reflection, etc. (*Z = -1.289, p = 0.197*). Indeed, median feedback score rating is 4.50 for pre-survey and 3.87 for post-survey.

Besides, pre and post-survey scores of how well teachers perceived their schools as supporting curriculum coherence with respect to the integration of CAS has no significant difference (*Z = -0.841, p = 0.400*). Median feedback score rating is 3.50 for both pre and post-survey.

Differences about CAS outcomes after implementing CAS improvement plans

Student perspectives do not change concerning CAS outcomes

Section 4 of the student survey was about CAS outcomes and subscales of this section are self-knowledge, commitment and ethics. Analysis showed that there is no significant difference between pre and post-survey scores of any of these subscales.

Pre and post-survey scores of how well students think they have obtained self-knowledge, including awareness of their strengths and areas for growth have a correlation, $p=0.030$. However, there is no significant mean difference in self-knowledge scores for pre-survey (M=3.78, SD=0.57) and post-survey (M=3.78, SD=0.84); t(40)=0.061, p=0.951.

Analysis also showed that there is a correlation between pre and post-survey scores of how well students show commitment and perseverance, $p=0.001$. However, there is no significant mean difference in the commitment scores for pre-survey (M=3.73, SD=0.68) and post-survey (M=3.55, SD=0.84); t(39)=1.513, p=0.138.

Lastly, that there is a correlation between pre and post-survey scores of how well students consider ethics of their choices and actions, $p=0.042$. However, there is no significant mean difference in the ethics scores for pre-survey (M=3.80, SD=0.66) and post-survey (M=3.75, SD=0.14); t(40)=0.336, p=0.739.

Teacher perspectives do not change concerning CAS outcomes

Section 4 of the student survey was about CAS outcomes and subscales of this section are self-knowledge and skills. Wilcoxon signed-rank test showed that professional development did not elicit a significant change in self-knowledge and skills.

Pre and post-survey scores of how well teachers think they have received self-knowledge to students, including awareness of their strengths and areas for growth

has no significant difference ($Z = -0.756, p = 0.450$). Median feedback score rating is 4.12 for pre-survey and 3.87 for post-survey.

In addition, there is no statistically significant difference between pre and post-survey scores in how well teachers perceived students take on challenges for developing skills, ($Z = -1.00, p = 0.317$). Indeed, median feedback score rating is 3.66 for pre-survey and 3.50 for post-survey.

Analysis results of school surveys except School 2

Since almost all of the participant students of School 2 were 12th grade students, paired sample t-test was conducted for matched students except School 2 students to see if workshop and webinars cause a difference in these schools. The test was conducted for the same subscales of the Section 2, 3 and 4 of surveys and all results about school culture, supports for CAS and outcomes of CAS section. See Appendix J for details. However, still no statistically significant difference was found for any of the subscales except a notable decrease on the feedback subscale of Section 2, which will be discussed further in the next chapter.

Conclusion

This research was a pre/post-test intervention design. Summaries and feedback about the CAS workshop and two follow-up webinars, along with schools' improvement plans were also reported in this chapter. The qualitative data from feedback indicated that all participants found workshop and webinars helpful. Most of them indicated their satisfaction of sharing and hearing information about CAS with other schools and that they had learnt different approaches to CAS, seeing their weaknesses more clearly through these workshop and webinars. Also, most participants see them as a start to strengthening CAS implementation in their school. Most importantly, strong impact was shown through a summary of CAS implementation plans, which may

take more time to trickle down into measurable differences in student/teacher

perspectives. While only 6 out of 9 schools submitted their CAS implementation

plans, 5 of these show remarkable fortitude in the number of new and refined

changes that the CAS teams were able to make in just one year on their CAS

programs. In spite of the positive feedback, almost no significant difference was yet

measurable through the analysis of the effect of professional development workshop

and webinars on developing CAS implementation and outcomes. In the last section,

the possible reasons of these results will be interpreted and discussed.

CHAPTER 5: DISCUSSION

Introduction

Conducting team-oriented professional development workshops can be an effective way of developing CAS implementation for IB schools in Turkey. Despite its limitations, this research is a first step to suggest changes on CAS implementation and professional development to improve CAS at the school-level in Turkey. This chapter will touch on how the study was conducted and reasons why certain methods were used, along with a summary of the major findings and discussion of some possible reasons behind the findings. Ideas to develop more effective workshops, implications to improve professional development, CAS and future studies about this topic are also included in this chapter.

Overview of the study

The aim of the study was to investigate the perceptions of teachers and students about CAS in their school, identify their plans to improve CAS and investigate the effect of the customized professional development workshop and webinars on CAS implementation, CAS outcomes and schools' CAS culture in Turkey. For this aim, a pre-survey about students' and teachers' perceptions of CAS was conducted before the professional development workshop and webinars. Then, a post-survey was conducted to learn differences on these perceptions again after 6 months of schools' trying to improve their CAS implementation and implementing their plans for that.

The research design was pre/post-test intervention design so investigations were done by pre and post-surveys for both students and teachers. Pre and post-surveys were divided into subscales which have 3-7 questions and results were compared for

each subscale to see if the customized professional development was effective for CAS in Turkey. These results were analyzed as the quantitative data of this research. Apart from these surveys, the researcher also observed participants during the workshop and webinars and feedback forms were collected from participants after the initial workshop and both webinars. Observations were used as the qualitative data and feedback was both for qualitative and quantitative data. In addition, participant schools reported their CAS development plans after the workshop and 6 months after implementing their improvement plans, they reported what changes were made and what challenges they faced, which also included qualitative data.

Also notable in this study was the qualitative data collected from observations and participant feedback about the workshop, which provided a strong positive evaluation of the PD. During the workshop, every participant was active, willing to share and hear ideas about CAS. They also stated these ideas get them to compare their CAS program with other schools and see their weak and strong points. The improvement plans were prepared according to the weak and strong points of their CAS implementation, and can be seen as a start to develop CAS programs through a team-based approach in schools. Six out of the 9 workshop schools developed and submitted improvement plans, and 5 out of these schools showed substantial strides period. According to indications of CAS coordinators, some of the important changes that schools made over 7 months were increasing engagement of students to CAS, getting more parents to involve in CAS and increasing the quality and variety of CAS reflection. While making these changes in schools, CAS coordinators indicated that they faced some challenges like cannot managing time well because of heavy work load, national grading and examination system and budgeting.

Discussion of the findings

The report by Yoon et al. (2007) showed that teacher professional development and student achievement are related with each other. Via the CAS professional development workshop and webinars in Turkey, teachers (and some administrators) got a chance to develop themselves, to become more knowledgeable about CAS and to become more aware of students' perceptions and CAS program needs. The participation of teachers with students in the workshop, especially, was seen as one of the most important things to help students to be more successful on implementing CAS because effective teacher guidance is one of the main points to have a developed CAS program in schools. All the feedback on the workshop and webinars that were conducted for this study were predominantly positive. Almost all participants found them very useful.

Desimone et al. (2002) concluded that professional development becomes more beneficial when there are group of teachers in the same school, department or grade level. In the workshop and webinars which were conducted for this research, small groups of teachers and students from each school participated. In their feedback about the workshop, participants indicated that they were pleased about communicating and collaborating with each other and together identifying CAS problems and weaknesses. However, CAS is not only the duty of CAS coordinators advisors and supervisors; it needs to be integrated with the whole school culture. Unfortunately, changing school cultures is something that takes time, and so not surprisingly, almost all of the differences from the pre- to post-survey on students' perceptions about CAS were insignificant.

This may have been attributable to any of a handful of reasons. One of the reasons of not finding a significant difference on CAS might be the inadequacy of getting only

several teachers from each school to participate and become knowledgeable about CAS. Curriculum coherence and teacher involvement are some of the subscales of surveys and they are the main points that a larger proportion of teachers in IBDP schools may need to be aware of to have a significantly measurable change. Although all schools had an improvement plan that covered improved teacher involvement, almost all of them were only briefly touching on this criteria and only School 9 had an item for arranging meetings with other teachers in their CAS development plans to get them more knowledgeable about CAS. This situation might be one reason of not having a significant difference especially on curriculum coherence and teacher involvement.

Additional reasons for the insignificant survey findings about school culture can also be noted. Similar to the number of teacher participants, only several students participated from each school. The team of schools could also be bigger in terms of student involvement because more highly committed students about CAS means more effective changes on CAS and it may not be possible to energize a whole school culture by only getting 2-3 students acting as catalysts. Though their catalyzing effect may depend on the immediacy of actions taken with peers upon their return to the school, and this was not studied carefully by the present research. In addition to the teacher and student participation, school cultures are complex and any given school culture often has many other academic challenges that it faces each year. Hence, other challenges may prevent the development and change of CAS culture in schools.

Although there was an innovative team approach being used for the workshop being analyzed, the workshop overall was only able to provide about 14-16 hours of professional development. Desimone et al. (2002) concluded a notable effect size

with an average 49 hours of professional development on student achievement. While on their workshop and webinar feedback forms participants had indicated that they learned more about many points of CAS, 14-16 hours of workshop and webinars are just a beginning to increasing their awareness of more CAS issues and importance of these issues. But it might not enough to make any measurable differences yet on CAS programs in schools.

There are also some possible reasons not to have a significant result in specific subscales of surveys related to how widely spread the topics were that the CAS workshop covered. Although the workshop and webinars touched briefly on such issues as how CAS links with TOK as well as with academic subjects, it also covered a wide variety of other topics that may have been new or even overwhelming to some teachers: service learning, building communities, ethics and CAS, reflection and the role of CAS interviews, teacher involvement in CAS and student engagement. The breadth of the workshop may have in some ways limited its capacity to empower teachers, because it covered so much new territory. Brodie (2014) indicated the absence of research knowledge about CAS and argued that DP coordinators are not aware of the link between CAS and academic subjects. Only one session was about curriculum integration during the workshop last summer, though well-conceived and engaging for teachers, it was only one session, and it by itself may need more explicit follow-up for teachers to begin integrating such ideas into their own practices.

In his prior research, Brodie (2014) also concluded that almost every student is aware of the importance of CAS but is not aware of the goal of the reflection process. Hence, it is clear from previous studies that CAS knowledge may often be inadequate also in terms of the starting point for many students as well. With the

workshop and webinars, one aim was helping both teachers and students to become more knowledgeable especially about the reflection process. In spite of not measurable change being noted, evidence from the qualitative data on this point was especially strong, showing that participants found feedback session of the workshop practical and useful because they learnt the various types of reflection, they got a clear idea of reflection and they had ideas to improve their own practice and how to maximize student reflection through interviews.

Also, on the feedback forms, participants indicated that they learned more about service learning. One of the participants even indicated that he/she did not know the difference between service and service learning.

Another strength of the workshop was that being more aware of CAS got members from each school team to see and discuss their weak points more carefully. This situation might have caused them to see their CAS implementation as inadequate and raise their expectations about how a good CAS implementation should be. Being aware of what is the correct way of CAS implementation may be a direct outcome of first becoming more aware of weak and undeveloped points. Nonetheless, as schools were still just entering into this CAS journey beyond the "go it alone" approach of CAS coordinators, this might be a further reason of having insignificant differences on most of the subscales of post-surveys (with one even showing a significant decrease on how teachers and students perceive the value of giving feedback to students.

About the decrease on the CAS feedback subscale, feedback was one of the items on which schools had least noted on their improvement plans, and was only covered very briefly in the workshop as well. Only Schools 4 and 9 had improvement plans that included feedback and theirs even were not so detailed. And, unfortunately,

School 9 was the school that was unable to participate in the post-survey. The teachers becoming more knowledgeable about the importance of feedback may have raised their own expectations for themselves, while the teachers still had not received enough training or been given enough time for improving their feedback processes within experiential learning, which might have caused worse survey results.

Apart from these reasons of having insignificant results for almost all subscales of the survey, another set of reasons may relate with inadequacies of the research design and measurement. The sensitivity of what the instrument is capable of measuring perhaps needs to be improved. If there were more items in each scale, perhaps the survey would be able to pick up on small shifts in the population. Overall, there was a relatively low number of students being analyzed from each school. There were 159 participants of student pre-survey and only 84 student participants for the post-survey. However, only 42 of them could be matched for analysis, and these 42 students might not reflect the perceptions of whole school. Furthermore, School 4 and School 9 were the schools that made the biggest efforts on developing their CAS implementation, and that participated in workshop and both webinars, and they sent clear CAS improvement plans. School 4 is the school that has the most detailed and extensive improvement plans. However, School 9 did not attend in the surveys and only 4 students from school 4 were able to complete the post-survey. An analysis with all the participants of Schools 4 and 9, especially, might well have given a different result for research question 4.

Implications for practice

This study described students' and teachers' perceptions on CAS before and after the professional development workshop and webinars. It also provided data about participants' perceptions on the workshop and webinars and their CAS improvement

plans. There are some areas of CAS implementation and professional development for CAS that the findings of this research can be used to improve and help schools to improve for future practice. Some recommendations were developed for these improvements.

One of the participants of the workshop suggested that people need to come together more often to create future plans for CAS. Research knowledge of CAS is very low, so more frequent workshop and seminars to help support CAS need to be developed. Firstly, more professional development workshops should be conducted more frequently in Turkey to get more teacher as well as administrators knowledgeable. Also, time duration of these workshops should be longer to have a deeper effect. Of course, if external facilitators are not affordable for the schools, enough CAS coordinators in Turkey now have over a decade of experience and could work more systematically to develop in-house professional development for supporting other DP schools regionally.

Brodie (2014) suggested that CAS should note be only the CAS coordinator's job; all staff members should be trained about CAS to some extent, so it is not likely enough to only train several teachers about CAS. After these professional development workshops, participant teachers need to arrange regular meetings or seminars to share the knowledge that they gained from the workshops to move it toward being more a part of the whole school culture.

Martin, Tanyu and Perry (2016) noted that professional development appeared to increase teachers' desire to help students with CAS. However, the students' desire is also important for an effective CAS implementation. I would recommend PD with both teachers and students like was conducted for this study. However, there were only several students from each school in the workshop and webinars. To make CAS

as the whole school culture it is also necessary to get more students to be aware of the aims of CAS. Hence, in addition to PD for teachers, regular student meetings and seminars are needed in schools.

From observation data and feedback forms of the CAS workshop, it was also noted that both teachers and students were often not clear about the meaning of service and service learning. Chung and McBride (2015) asserted that service learning encourages deeper learning and youth development within a PYD framework. The meaning of CAS and its components, how CAS activities and experiences contribute to effective CAS outcomes need to be learnt before learning what to do to complete the CAS program, and thus have the IB diploma. Finally, students also had difficulty to do reflection, which completely relates with understanding the deeper meaning and purpose of CAS activities and experiences. If the priority of CAS is to contribute to improving students' by its outcomes rather than complete IB diploma requirements, then reflection part can be more varied for students so that it can tune into students' many different ways of learning (through visuals, audio, or other formats), not simply through written processes (Perry & Martin, 2016).

In addition to workshops with larger amount of teachers and students, more webinars can be used to support the schools in smaller groups according to their time schedules, so that more accountability is established for discussing how each CAS team is following through with its improvement plans, and ideally getting students and teachers more involved.

Implications for further research

This study is a good first step to see students' and teachers' perception on CAS, their weak, strong points, along with points that they are willing to change and planned to develop. For future research, research about more frequent workshops with longer

time durations can be conducted. It is not easy to change the steady culture of schools in a short time so a longer-duration or even longitudinal study based on the results of this study would be more effective.

Schools can be examined for more long-term impact instead of only 7 months because for something as complex as CAS, it may take more than 7 months for the changes made to trickle into the awareness of students in both how the CAS team, especially teachers, are able to better support students' experiential learning, as well as indirectly supporting the improvement of how schools culture can support CAS.

Besides, surveys questions of this research are divided into subscales to see participants' perceptions in different ways. However, subscales had at most 7 questions and many subscales had only 3 questions. More questions are more effective to analyze the subscales and pickup more nuanced differences between schools as well as between pre- and post-testing. Hence, more developed surveys can be prepared with larger number of questions based on the questions of the surveys were used in this research. There were also some reverse coded questions in surveys and these questions included confusing countable words, especially for nonnative speakers such as few and rarely. These reverse coded questions needed to be taken out, or clarified much better, because of their low reliability coefficients. For future studies, surveys can be improved by using more clear words, especially for the negative items used with second-language learners.

Limitations

Although using the team approach with several teachers and students in each school made the workshop and webinars effective and received well by participants, the limited time and duration of the PD is one of the most important limitations of this

research. To develop school CAS culture, CAS implementation and CAS outcomes, longer professional development is needed to be provided.

Another important limitation of this study is that a limited number of students participated both in pre and post-survey. Number of matched exactly same people was low and other students were matched according to their similar demographics. Also, only half of the post-survey participants were matched with some pre-survey participants. These limitations might have affected the results of the research. However, all matched students are in the same school and same gender which satisfy the most important issues of matching.

Another limitation is that some schools participated in additional activities along with the workshop and webinars of this research. A short survey of open-ended questions question completed by CAS coordinators helped to explain these intervening effects and describe other CAS-related activities in which some schools participated. According to their answers, two schools participated in other several workshops and one school organized a symposium where state and private schools participated, and these likely have cumulative effects that may also make the impact of their CAS program stronger as time goes by, even though it was not yet measurable in the present study.

Also, as noted, most of the student participants in the pre- and post-survey were not the same students. The aim was to conduct the pre-survey with first year IBDP students and to conduct the post-survey with the same students who mature from one year and become second year IBDP students. However, most of the post-survey participants of School 2 were again first year IBDP students. This caused a less effective comparison in terms of the statistics that were possible.

Lastly, participants reported data about themselves and they might not be completely honest as they might not have wanted to report truths about themselves, or about their schools. Or they may have been overly critical about their schools as well. This situation is typical for self-report data, and may have caused some incorrect results of the study.

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APPENDIX A: School culture and CAS: A survey for IBDP students
(This survey was developed by the researcher.)
The English version of the online student survey is located here:

https://docs.google.com/forms/d/1jef8ni0wEfnQ1jFMNOZy9yJRaZPYpKvwmodKL
WTQSjQ/edit?usp=drive_web

Students' perceptions of CAS are important to gain insights into the supports, strengths and weaknesses of programs in different schools. This survey asks basic questions about yourself as a student (demographics), how you assess your school culture, supports you notice for CAS, and your views about CAS outcomes. Thank you for completing this survey.

Section 1: Demographic Information

1.   What school do you attend? _____

2.   What is your student ID number? _____
Note: ID numbers are requested only for purposes of matching your first survey with a follow-up survey next winter.

3.   Including this year, how many years have you attended an IB school? ____

4.   What is your gender?
__ Female
__ Male

5.   What high school subject area are you most likely to study as a major in university?
o   Humanities (foreign languages, language/literature in my native tongue)
o   Mathematics
o   Sciences (physics, biology, or chemistry)
o   Social sciences (psychology, economics, etc.)
o   Arts, music, or drama
o   Interdisciplinary studies
o   Other: _____
o   Uncertain

6.   Which of the following best describe your long-term career goals? (Mark all that apply.)
__ Non-profit sector: Working for the UN or community/civil society organizations
__ Business
__ Arts or creative professions (artist, actor, musician, etc.)
__ Academics: Sciences or social science research (scientist or academic)

__ Economics
__ Engineering
__ Law or legal professions
__ Medicine or health professions
__ Education or learning professions (teaching, work in museums, etc.)
__ Sports training, athletic careers, etc.
__ Other: _____
__ Uncertain

7.   Which of the following best describe your interests outside of school? (Mark all that apply.)
__ Academic or science clubs
__ Animal care
__ Arts and crafts
__ Cooking
__ Dancing
__ Debate, MUN, or similar activities
__ Drama
__ Gardening
__ Music
__ Outdoor activities (hiking, camping, etc.)
__ Service work (helping others)
__ Sports, individual
__ Sports, team
__ Writing
__ Other: _____

Section 2. Your School Culture

Review the following statements and circle the response that best reflects your beliefs.

Item	I believe that my school (or many teachers)…	Strongly disagree	Disagree	Neutral / unsure	Agree	Strongly agree
2.1	Communicates a sense of purpose that reflects the IB learner profile.	1	2	3	4	5
2.2	Monitors my individual progress closely in terms of assignments submitted.	1	2	3	4	5
2.3	Encourages me regularly to engage in self-assessment about my own work.	1	2	3	4	5
2.4	Gives courses that allow me to explore interests across subjects.	1	2	3	4	5
2.5	Encourages teachers to support student learning	1	2	3	4	5

	outside of classrooms.					
2.6	Has an established record of working with community organizations.	1	2	3	4	5
2.7	Is concerned about giving feedback regularly to help me improve.	1	2	3	4	5
2.8	Rarely asks me to reflect on the quality of my coursework.	1	2	3	4	5
2.9	Encourages me to engage in interdisciplinary learning across subjects.	1	2	3	4	5
2.10	Gives all (IB and non-IB) students equal opportunity to participate in extracurricular and enrichment activities.	1	2	3	4	5
2.11	Reaches out to local community members to participate in school events (arts/music, culture, or sports).	1	2	3	4	5
2.12	Provides little feedback to me about my learning outcomes.	1	2	3	4	5
2.13	Encourages me to engage in inquiries that cross varied academic fields.	1	2	3	4	5
2.14	Stimulates me to consider the meaningfulness of activities from personal perspectives.	1	2	3	4	5
2.15	Supports my social and emotional development, along with my academic learning.	1	2	3	4	5
2.16	Includes a parent association that is active in supporting the school community.	1	2	3	4	5
2.17	Aims to develop caring young people who help to create a better and more peaceful world.	1	2	3	4	5
2.18	Offers courses that include journaling or writing about my personal life experiences.	1	2	3	4	5

2.19	Promotes course activities that encourage me to apply my academic learning to practical situations.	1	2	3	4	5
2.20	Offers courses that are effective in using inquiry-based learning.	1	2	3	4	5
2.21	Discourages parents who make useful suggestions.	1	2	3	4	5
2.22	Inspires teachers to use more student-centered approaches to learning.	1	2	3	4	5
2.23	Offers many clubs or events, outside of classroom learning, that appeal to a variety of student interests.	1	2	3	4	5
2.24	Helps me to improve self-management by giving feedback about the learning process.	1	2	3	4	5
2.25	Comments. *Are there other aspects of your school that create a positive learning environment for supporting CAS? If so, what are they?*					

Section 3: Supports for CAS

Item	Based on my observations of how CAS works at my school, I believe that…	Strongly disagree	Disagree	Neutral /unsure	Agree	Strongly agree
3.1	Reflection is poorly explained by teachers to students.	1	2	3	4	5
3.2	CAS advisors encourage us to do many types of reflection (art, poetry, video, journals, etc.)	1	2	3	4	5
3.3	CAS is clearly connected with other subject areas.	1	2	3	4	5
3.4	The CAS coordinator or advisors monitor closely	1	2	3	4	5

	our CAS projects and experiences.					
3.5	Nobody pays much attention to the choices that I make for CAS.	1	2	3	4	5
3.6	My CAS Coordinator or advisor is really helpful in giving me feedback about my goals or choices I make for CAS.	1	2	3	4	5
3.7	Every semester, I receive regular feedback about my CAS reflections.	1	2	3	4	5
3.8	Many teachers in my school like to be involved with CAS.	1	2	3	4	5
3.9	It is difficult to see the links between CAS and my other IBDP courses.	1	2	3	4	5
3.10	I have learned little from the CAS reflection process.	1	2	3	4	5
3.11	Our school has well-established service partners (e.g., Rotary, Lions, TEMA, and Lösev) for CAS.	1	2	3	4	5
3.12	Our service partners understand the value of CAS for learning and social support.	1	2	3	4	5
3.13	Besides the CAS coordinator, other teachers also show an interest in our CAS projects and experiences.	1	2	3	4	5
3.14	My CAS goals and what I reflect on my experiences are reviewed by the CAS coordinator (or CAS advisors) to guide me.	1	2	3	4	5
3.15	The practical implications of CAS for academic subject areas are explained well by some teachers.	1	2	3	4	5
3.16	Group discussions are helpful for feedback about how my CAS plans are progressing.	1	2	3	4	5

3.17	Most teachers don't really understand the importance of CAS.	1	2	3	4	5
3.18	Some parents help in maintaining relations with our community service partners.	1	2	3	4	5
3.19	I rarely get any comments about my reflections for CAS.	1	2	3	4	5
3.20	I love doing reflections on my CAS experiences.	1	2	3	4	5
3.21	The importance of reflection is explained well by the CAS Coordinator and/or CAS advisors.	1	2	3	4	5
3.22	TOK-related discussions sometimes occur during CAS experiences.	1	2	3	4	5
3.23	Some of my academic teachers show interest in my CAS work.	1	2	3	4	5
3.24	The school works with a variety of well-established community agencies for doing CAS service projects.	1	2	3	4	5
3.25	I don't see the point of reflection.	1	2	3	4	5
3.26	When possible, I write reflections in great depth.	1	2	3	4	5
3.27	Peer feedback helps me understand CAS better.	1	2	3	4	5
3.28	Comments. *What are other supports for CAS?*					

Section 4: Outcomes of CAS

Item	Based on honest observations of myself…	Strongly disagree	Disagree	Neutral / unsure	Agree	Strongly agree
4.1	I learn very little about myself by doing CAS.	1	2	3	4	5
4.2	I rarely take on new challenges.	1	2	3	4	5

4.3	CAS has helped me learn to try things I've never done before.	1	2	3	4	5
4.4	I feel strongly committed to the CAS projects that I'm involved in.	1	2	3	4	5
4.5	Working together with my peers is something that teaches me a lot.	1	2	3	4	5
4.6	I sometimes choose local CAS projects because I see their global importance.	1	2	3	4	5
4.7	CAS helps me to see the ethical implications of my actions.	1	2	3	4	5
4.8	CAS helps me understand my strengths and weaknesses.	1	2	3	4	5
4.9	It is difficult to develop new skills because I don't like to take on new challenges.	1	2	3	4	5
4.10	I'm not really a "planning" person, so starting new CAS projects is very difficult for me.	1	2	3	4	5
4.11	It is difficult to follow through and complete most CAS projects.	1	2	3	4	5
4.12	Working with others on projects help me to realize the challenges of collaboration.	1	2	3	4	5
4.13	It is difficult to see the relation between a local event and its global significance.	1	2	3	4	5
4.14	If my parents ask me about the impact of my CAS work on other people, I can explain.	1	2	3	4	5
4.15	Discussing the ethics of choices within CAS is unimportant for my learning.	1	2	3	4	5
4.16	I see more clearly who I am in relation to my core values by participating in CAS.	1	2	3	4	5

4.17	Participating in CAS projects has helped me to develop a variety of new skills.	1	2	3	4	5
4.18	I tend to join existing CAS projects, rather than initiating my own.	1	2	3	4	5
4.19	I tend to finish most CAS experiences and projects that I start, and follow-up on the ones that have no final ending.	1	2	3	4	5
4.20	I do collaborative work in my academic courses, so I don't see the value of doing it in CAS too.	1	2	3	4	5
4.21	For service experiences, especially, I can explain the relation between their local and global importance.	1	2	3	4	5
4.22	CAS work helps me to understand better the values of others and how they sometimes clash with each other.	1	2	3	4	5
4.23	I realize that self-knowledge is not a simple thing, but something that develops as I observe myself in different community contexts.	1	2	3	4	5
4.24	After I finish CAS, I will probably continue to do some of the service work that I have begun, because I see its importance.	1	2	3	4	5
4.25	Comments. *Would you like to mention any other outcomes of CAS? If so, what are they?*					

APPENDIX B: School culture and CAS: A survey for IBDP teachers
(This survey was developed by the researcher.)
The English version of the online teacher survey is located here:

https://docs.google.com/forms/d/1TxRRQFMWDekki-xZ-y8HpZX7L6CSxGR9giGh1QYFYPo/edit?usp=drive_web

Teachers' perceptions of CAS are important to gain insights into the supports, strengths and weaknesses of programs in different schools. This survey asks basic questions about yourself (demographics), how you assess your school culture, supports for CAS, and your views about CAS outcomes. Thank you for completing this survey!

Section 1: Demographic Information

1.   In which school do you work? _____

2.   What is your name?_____
Note: Names are requested only for purposes of matching your first survey with a follow-up survey next winter. Afterwards, all names will be deleted.

3.   What is your gender?
__ Female
__ Male

4.   Including this year, how many years have you worked as a CAS coordinator or advisor? __

5.   About how many CAS students do you advice or supervise?
_____

6.   Including this year, how many years have you worked for an IB school? ____

7.   What high school subject areas do you teach? (Mark all that apply.)
o   Arts, music, or drama
o   Humanities (foreign languages, language/literature in my native tongue)
o   Mathematics
o   Physical education
o   Sciences (physics, biology, or chemistry)
o   Social sciences (psychology, economics, etc.)

o　　　　　　Interdisciplinary studies
o　　　　　　Other: _____
o　　　Uncertain

8.　　　Which of the following best describe extra-curricular areas in which you advise?
(Mark all that apply.)
__ Academic or science clubs
__ Animal care
__ Arts and crafts
__ Cooking
__ Dancing
__ Debate, MUN, or similar activities
__ Drama
__ Gardening
__ Music
__ Service work (helping others)
__ Sports, individual
__ Sports, team
__ Writing
__ Other: _____

9.　　　Which of the following best describe your own personal interests outside of school?
(Mark all that apply.)
__ Animal care
__ Arts and crafts
__ Cooking
__ Dancing
__ Drama
__ Gardening
__ Music
__ Reading clubs
__ Science clubs
__ Service work (helping others)
__ Speaking clubs
__ Sports, individual
__ Sports, team
__ Writing
__ Other: _____

Section 2: Your School Culture

Review the following statements and circle the response that best reflects your beliefs.

Item	I believe that my school…	Strongly disagree	Disagree	Neutral / unsure	Agree	Strongly agree
2.1	Communicates a sense of purpose that reflects the IB learner profile.	1	2	3	4	5
2.2	Monitors student progress closely in terms of assignments submitted.	1	2	3	4	5
2.3	Encourages students to self-assess and review their own work regularly.	1	2	3	4	5
2.4	Gives courses that allow students to explore interests across subjects.	1	2	3	4	5
2.5	Encourages teachers to support student learning outside of classrooms.	1	2	3	4	5
2.6	Has an established record of working with community organizations.	1	2	3	4	5
2.7	Is concerned about giving feedback regularly to students to help them improve.	1	2	3	4	5
2.8	Rarely asks students to reflect on the quality of their coursework.	1	2	3	4	5
2.9	Encourages students to engage in interdisciplinary learning across subjects.	1	2	3	4	5
2.10	Gives all (IB and non-IB) students equal opportunity to participate in extracurricular and enrichment activities.	1	2	3	4	5
2.11	Reaches out to local community members to participate in school events (arts/music, culture, or sports).	1	2	3	4	5
2.12	Provides little feedback to students about their learning outcomes.	1	2	3	4	5
2.13	Encourages students to engage in inquiries that cross varied academic	1	2	3	4	5

	fields.					
2.14	Stimulates students to consider meaningfulness of all activities from personal perspectives.	1	2	3	4	5
2.15	Encourages teachers to support students' social and emotional development, as well as their academic learning.	1	2	3	4	5
2.16	Includes a parent association that is active in supporting the school community.	1	2	3	4	5
2.17	Aims to develop caring young people who help to create a better and more peaceful world.	1	2	3	4	5
2.18	Offers courses that include journaling or writing about students' personal life experiences.	1	2	3	4	5
2.19	Promotes course activities that encourage students to apply their academic learning to practical situations.	1	2	3	4	5
2.20	Teachers are effective in using inquiry-based learning.	1	2	3	4	5
2.21	Discourages parents who make useful suggestions.	1	2	3	4	5
2.22	Inspires teachers to use more student-centered approaches to learning.	1	2	3	4	5
2.23	Offers many clubs or events, outside of classroom learning, that appeal to a variety of student interests.	1	2	3	4	5
2.24	Helps students improve self-management by giving feedback to students about the learning process.	1	2	3	4	5
2.25	Comments. *What other aspects of your school culture contribute to or detract from a positive learning environment?*					

Section 3: Supports for CAS

Item	Based on my observations of how CAS works at my school, I believe that…	Strongly disagree	Disagree	Neutral / unsure	Agree	Strongly agree
3.1	Reflection is poorly explained by teachers to students.	1	2	3	4	5
3.2	Students are encouraged to do many types of reflection (art, poetry, video, journals, etc.)	1	2	3	4	5
3.3	CAS is clearly connected with other subject areas.	1	2	3	4	5
3.4	The CAS coordinator or advisors monitor closely students' CAS projects and experiences.	1	2	3	4	5
3.5	Nobody pays much attention to choices that students make for CAS.	1	2	3	4	5
3.6	The CAS Coordinator or advisors are helpful in giving students feedback about their goals or choices they make for CAS.	1	2	3	4	5
3.7	Every semester, students receive regular feedback about their CAS reflections.	1	2	3	4	5
3.8	Many teachers like to be involved with CAS.	1	2	3	4	5
3.9	It is difficult to help students see the links between CAS and their other IBDP courses.	1	2	3	4	5
3.10	Many students learn little from the CAS reflection process.	1	2	3	4	5
3.11	Our school has well-established service partners (e.g., Rotary, Lions, TEMA, and Lösev) for CAS.	1	2	3	4	5
3.12	Our service partners understand the value of CAS for learning and	1	2	3	4	5

	social support.					
3.13	Besides the CAS coordinator, many other teachers also show an interest in students' CAS projects and experiences.	1	2	3	4	5
3.14	Students' CAS goals and reflections on their experiences are reviewed by the CAS coordinator (or CAS advisors) to guide the students.	1	2	3	4	5
3.15	The practical implications of CAS for academic subject areas are explained well by some teachers.	1	2	3	4	5
3.16	Group discussions help many students by giving feedback about how their CAS plans are progressing.	1	2	3	4	5
3.17	Most teachers don't really understand the importance of CAS.	1	2	3	4	5
3.18	Some parents help in maintaining relations with our community service partners.	1	2	3	4	5
3.19	Students rarely receive any comments about their reflections for CAS.	1	2	3	4	5
3.20	Some students love doing a variety of reflections about their CAS experiences.	1	2	3	4	5
3.21	The importance of reflection is explained well by the CAS Coordinator and/or CAS advisors.	1	2	3	4	5
3.22	TOK-related discussions sometimes occur during CAS experiences.	1	2	3	4	5
3.23	Some academic teachers show interest in students' CAS work.	1	2	3	4	5
3.24	The school works with a variety of well-established community agencies for doing CAS service projects.	1	2	3	4	5

3.25	Many students don't see the point of reflection.	1	2	3	4	5
3.26	Some students write reflections in great depth.	1	2	3	4	5
3.27	Peer feedback helps some students understand CAS better.	1	2	3	4	5
3.28	Comments. *What are the other supports for CAS?*					

Section 4: Outcomes of CAS

Item	Based on honest observations of myself…	Strongly disagree	Disagree	Neutral or unsure	Agree	Strongly agree
4.1	Most students learn very little about themselves by doing CAS.	1	2	3	4	5
4.2	Most students rarely take on new challenges.	1	2	3	4	5
4.3	CAS has helped some students learn to try things they had never done before.	1	2	3	4	5
4.4	Many students feel strongly committed to their CAS projects.	1	2	3	4	5
4.5	Working together with peers is something that teaches many students a lot.	1	2	3	4	5
4.6	Students sometimes choose local CAS projects because they see their global importance.	1	2	3	4	5
4.7	CAS helps most students to see the ethical implications of their actions.	1	2	3	4	5
4.8	CAS helps most students understand their strengths and weaknesses.	1	2	3	4	5
4.9	Many students have difficulty to develop new	1	2	3	4	5

	skills because they don't like to take on new challenges.				
4.10	Many students are not "planning" oriented, so starting new CAS projects is very difficult for them.	1	2	3	4	5
4.11	For many students, it is difficult to follow through and complete most CAS projects.	1	2	3	4	5
4.12	Working with others on projects helps most students to realize the challenges of collaboration.	1	2	3	4	5
4.13	It is difficult for some students to see the relation between a local event and its global significance.	1	2	3	4	5
4.14	If parents ask their children about the varied impacts of their CAS work on other people, most students could explain.	1	2	3	4	5
4.15	Discussing the ethics of choices within CAS is unimportant for many students.	1	2	3	4	5
4.16	Many students see more clearly who they are in relation to their core values by participating in CAS.	1	2	3	4	5
4.17	Participating in CAS projects has helped most students to develop a variety of new skills.	1	2	3	4	5
4.18	Some students tend to join existing CAS projects, rather than initiating their own.	1	2	3	4	5
4.19	Students tend to finish most CAS experiences and projects that they start, and follow-up on the ones that have no final ending.	1	2	3	4	5
4.20	Most students don't see the value of doing	1	2	3	4	5

	collaborative work in CAS experiences or projects.					
4.21	For service experiences, especially, most students can explain the relation between their local and global importance.	1	2	3	4	5
4.22	CAS work helps most students to understand better the values of others and how they sometimes clash with each other.	1	2	3	4	5
4.23	Many students realize that self-knowledge is not a simple thing, but something that develops as they observe themselves in different community contexts.	1	2	3	4	5
4.24	After finishing CAS, many students will probably continue to do some of the service work that they had begun, because they see its importance.	1	2	3	4	5
4.25	Comments. *What other CAS outcomes have you observed in your IBDP students?*					

APPENDIX C: CAS workshop feedback form
(This form was developed by the researcher.)

Please give us feedback on this workshop. This will help us for professional development research and to improve for the future.

1. Please rate the following workshop components:

Use a rating scale of 1 – 5, with <u>5 being excellent</u> and <u>1 being poor</u>.

Time	Workshop Topic	Your interest in the topic	Your engagement in the activity	Comments: What went well? What was challenging?
Mon a.m.	**Session 1: The Introduction and CAS role in the IB Diploma**			
Mon a.m.	**Session 2: Service Learning and CAS**			
Mon p.m.	**Session 3: CAS and Theory of Knowledge**			
Mon p.m.	**Session 4: CAS Projects**			
Tues a.m.	**Session 5: Ethics and CAS**			
Tues a.m.	**Session 6: Reflection and the role of CAS interviews**			
Tues p.m.	**Session 7: Student Projects** **7b. CAS Graduates reflect**			
Tues p.m.	**Session 8: Action Planning for improving CAS at each school**			

Many thanks for your comments!
We will try to incorporate them into our research findings and any subsequent workshops.

APPENDIX D: CAS improvement plans

Focus of CAS Improvement Plans: A qualitative summary

School/Topics	School 1	School 2	School 4	School 6	School 7	School 9
Reflections	*Emphasizing the importance of reflection and practicing on it *Emphasizing the different means of reflection	*Sharing sample previous journals with students through CAS Moodle system, CAS booklet and hard copies of previous students * İnviting a former CAS student who demonstrated outstanding performance in a project to school to present his/her experience to the new CAS students	*Stressing the type and quality of reflections of students *CAS advisers will get trainings	*Online reflection for students to share their experiences of CAS and what can be done by the school to improve CAS	*Promoting the idea that reflection can take many forms *Teaching how to reflect CAS experiences. *Preparing guiding questions for students to reflect themselves properly	*Extending the reflection to connect with TOK
Monitoring			*Scheduling meeting to see how well the CAS student gets organized	* Students share their progress so far	*Ensuring that students achieve all learning outcomes by having CAS experiences by checking their reflections and proposal forms	
Feedback			*Setting regular adviser-student meeting times so that commenting on the progress also face to face			* IB teachers will be trained
Curriculum Coherence	*Emphasizing the links between Unit planners and CAS *Using of IB unit planners to enable stronger subject links to both CAS and TOK *Getting support and advice for subject areas from CAS and TOK coordinators	* CAS supervisors will try to integrate new projects with people, associations and non-governmental organizations from different social status in order to make the students gain different TOK perspectives	* All the teachers will consider any CAS experience related with their course and write this down in an Curriculum Mapping software.	*Students will express what they completed during their CAS activities to find links between the CORE subjects and their DP subjects *Understanding how to make inks to CAS learning outcomes by getting Grade 12 students to present to Grade 11 students *Students will reflect on their CAS activities, making links to ToK, sharing experiences	*Setting the links between CAS and TOK, extended essay and DP subjects	*Arranging a meeting with teachers to explain how they can connect academic subject with CAS, TOK and Service Learning

				with grade 10 students	
Teacher Involvement	*Providing information on CAS and asking for volunteers to help supervise	*Making announcements, inviting other subject teachers to CAS activities in general staff meetings	*School teachers who also act as club advisers are going to be trained for the use of ManageBac.	*Identifying which teachers will be responsible for CAS activities and CAS Panel * Assigning students to teachers according to activities	*Explaining what the role of supervisor is and getting the all teachers more involved in helping with CAS	*Creating a policy for finding CAS Advisors
Building Community	*CAS introduction meetings with parents *Active involvement of parents on Managebac *Asking support from parents when necessary *Arranging project fairs *Designing new CAS logo	* On teacher – parent meeting days, parents who volunteer for CAS could be reached and their contact information could be used for various activities	*Having CAS page within the school website *Organizing a Market Place where student CAS work will be displayed at certain places within school for a certain period of time *Such NGO's as TOG, Alp Şen Foundation etc will be informed about the importance of CAS.	* Having parents and teachers involved in the students CAS progress	*Updating the school's website to include information on the CAS program *Preparing CAS booklet for parents.	
Service and Service Learning		* Students will be given the opportunity to meet with people who need service from different communities, neighborhood and environment	*Adviser teachers will be helping their students in improving strategies for improving the service learning aspect			*UAA will announce its own Service program which covers for non-ib students in the basis of CAS philosophy
Other Issues				*Introducing Grade 11 students to CAS by CAS handbook and yearly plan of activities.		

APPENDIX E: Summaries of two follow-up CAS webinars

First CAS Webinar

First CAS webinar included seven sections which are strategies for developing the quality of reflection, curriculum coherence, building communities, increasing teacher involvement in CAS, service learning, student engagement, and risk management.

The webinar started with strategies for developing the quality of reflection. Firstly, the answer of the question "what do we want students to reflect on for CAS?" is discussed. School 6 argued that they generally think about who, how, why and what but they do not get too much attention on how the students feel when dealing with issues. Without really understand these feelings and emotions of students we cannot sure how much of students really understand what they went through in their activities. They also mention about that students do something but generally they do not know why or how they are doing this so they are asking them how they decide their activities.

School 7 also shared their opinions about reflection. They mentioned that ways to reflect change in our school like videos, forming blogs and this is really good opportunity for our students because most of them do not prefer writing for reflection. They also wanted to learn about what can be the number of reflection for one CAS experience. J. Cannings suggested deciding timing according to duration and importance of the activity. He suggested that if the activity take 10-12 weeks or more, 2 or 3 reflection might be required. School 6 talked about the relation between reflection and learning outcomes. They think that reflection should be linked with which of the seven learning outcomes students have chosen for the activity.

J. Cannings asked participant their opinions about restricting students to reflect on just two learning outcomes for their experiences. School 6 thinks that it could be restrictive but it depends on the number of activities that students are doing. They think that focusing on one or two outcome for one particular activity can be a good idea so they can focus their reflection better. However, School 7 did not agree with this idea because they think that they need to complete their CAS program in only 18 months.

School 5 thinks that reflection is a scary word for students, they do not know what to do and how to reflect so it is difficult for them to understand what a reflection is. After these comments, J Cannings asked them have they ever tried to teach students what a reflection is. School 5 mentioned that they asked students to write reflection in especially Turkish lessons and they teach them how to reflect and connect the lesson with CAS reflection. School 7 claimed that, students can write reflection for anything they have experienced but for CAS reflections, it is not only writing and expressing what they did but also they need to reflect on their gaining, thoughts and feelings and this is the difficult part for them.

Another section of the webinar was curriculum coherence. Participants talked about the steps were taken to link CAS and TOK. School 4 mentioned that they are trying to reorganize and improve their CAS program. They asked TOK teachers to improve students' reflection ability in the TOK classes. School 6 said that they are going to give a brief introduction to teachers about TOK and try to make links between CAS and specific subject areas and try to make TOK teachers to join CAS activities. During the CAS activities with TOK teachers, if students write their reflection and TOK teachers check them and give feedback immediately, they easily understand the relation.

About the link between CAS and academic subjects, School 4 mentioned that they write their unit plans by using Atlas and it has CAS and TOK items also. School 6 mentioned that they started to do service learning during middle school years. They try to make it whole school culture, not only IB students. School 4 also said that students other than IB students are also required to do service projects.

For the building communities, School 4 said that they invited parent at the beginning of the semester while they are introducing CAS to 11th grade students. However, parent participation was not very high. School 5 mentioned that they have social media account to share activities and parents are following these accounts. Besides, school 6 said they are using school website to promote all activities and they had a presentation for parents to explain CAS at the beginning of the academic year. They also send email to parents at the beginning of the year to explain all CAS projects and willing parents can be supervisors of an activity. About non-governmental organizations (NGO), School 4 mentioned that they invite as many as organizations to their school each year so students have a change to talk with them and have an idea. In addition, School 7 mentioned that they have do service activities with village schools in Erzurum but local community do not know why their students do these activities and why these activities are necessary for their diploma.

About increasing teacher involvement in CAS, School 5 said that they build an activity committee and it includes teachers. These teachers arrange activities and follow students. School 6 mentioned that they do general meeting at the beginning of the year and each teacher decide a club. They encourage teachers to think the link of these clubs and CAS. School 4 said that they have also clubs. Teachers are club advisors and they are also CAS advisors of the same students. School 4 and School 6

said that they have no extra payment for extra-curricular activities, only willing teachers do that.

Since it was mentioned about service learning in each section, this section is skipped.

Another section was student engagement. School 9 mentioned that each non-IB students will have to 15 hours service activity before they graduate (totally 60 hours). School 5 said that their students go to a state school and teach math, science and language classes to primary school students. Students are responsible to arrange it and all planning is done by students. School 6 mentioned that they involved students in the process of helping to improve CAS. Students, who came to the workshop in İstanbul, will present to the 12th grade students and parents. School 9 said that their school organize IB orientation for the new IB year, each year they invite previous students and they share their experiences.

Last section was risk assessment. Participants shared their opinions about the meaning of risk management. School 4 thinks that it is getting parent approval of whatever students are doing and setting parent approval letter because if the activity is risky, parents should know that. School 6 thinks that there is always a teacher or supervisor with students during their activities. They mentioned that they have a booklet and teachers should fill out this booklet before they attend the activity. They also get health report and parents' permission.

Before ending the webinar, J. Cannings got questions of participants. School 4 said that certificate students are not as enthusiastic as diploma program students and they asked that how they can involve them in activities. School 9 suggested that make these students enjoy from the activity. Robin Ann Martin suggested that make them to talk other students who are enjoying the activities and value of them.

Before the second CAS webinar, participating students and teachers had been requested to prepare a progress report. They were requested to give 5-6 minute verbal report on what goals have been achieved and what needs to be worked on still.

At the beginning of the webinar schools talked about changes about CAS after the workshop in Koç School. During the webinar, J. Cannings asked guiding questions to learn more details about their CAS progress.

School 9 indicated that they followed their own schedule but they started to see what they are doing in a different perspective. The student from School 9 stated that the hardest learning outcome that she could achieve is ethics. She thinks learning outcomes about ethics were not hard to do but were hard to comprehend. She also thinks that any kind of CAS is a part of ethics because you need to care about others. In addition, School 9 talked about the how students find it difficult to write reflection. However, they indicated that students started to use other forms of reflections than writing like video reflections or songs. They think that their TOK lessons are not directly related with CAS.

School 4 continued to talk about CAS in their school. They indicated that after the workshop in Koç, they started to arrange some parts of CAS. They stated that they increased the number of their CAS advisors for the 11th and 12th grade students, tried to emphasize more on reflection, different types of reflection. They also stated that they organized parent meetings to introduce CAS and to explain students' CAS experiences so parents started to see the importance of CAS. They indicated that another issue that they tried to develop is time management of students because they think that they need to be able to manage their time to do CAS. Also, they stated that

they organized advisors meeting to talk about their CAS students. Like the School 9, School 4 also thinks that their TOK lessons are not directly related with CAS.

School 5 students stated that they began to be responsible to talk with their peers about CAS. Students had a little conference about CAS and shared their CAS experiences. They indicated that during the workshop in Koç School, they discussed that reflection is not only writing what we did. Since then, they realized most of the students do reflection wrong. For this reason, they stated that they gave good reflection examples to students, they tried to tell students how to express their feelings to reflect on their CAS experiences and improve students' reflections. In addition, they stated that they have a website for students' CAS activities. However, they stated that they could not do anything to inform parents about CAS because their school is a boarding school and parents can visit the school only once or twice a year.

School 6 indicated students who attended the workshop in Koç School had a presentation to their peers about weak and strong points of CAS in their school. They stated that they tried to find solutions about their weak points after the workshop. They also said that 12th grade IB students had a presentation to the parents and they explained their CAS projects, their achievements and what they learnt about their projects. They mentioned that they are working to have an annual CAS magazine next semester. Besides, they think that students can explain what they did in their CAS activities but they have difficulty about explaining their feelings so they tried to improve students' reflection quality. To improve it, students get effective feedback for their reflections. They also got more students active on CAS, they had extracurricular activities and teachers involved these activities according to their hobbies.

After all schools talked about CAS in their school, J. Cannings summarized all schools' reports and wanted schools to give report of "Where do you go now?" How do you push CAS further, improve its status in the school, publicize it, or anything else. He encouraged them to take time before responding. School 4 started by indicating that making CAS to their whole life idea is gradually improving and planned to get graduated students to display their CAS projects to others. Also, they stated that they are trying to have an online magazine to publish students' works. One of the participant students from School 4 stated that she is searching for possible CAS projects and planned to keep a blog about that.

School 9 indicated that they are trying to create a webpage about CAS so some students are creating a template and some of them are publishing their CAS activities and experiences. The participant students from School 9 proposed that they can arrange an IB orientation to tell new IB students about their CAS experiences, what they did wrong or correct during this process because she thinks the hardest part of CAS is trying to understand CAS at the beginning of this process and students often give importance to the ideas of their peers rather than of their teachers.

School 5 stated that students do their CAS activities but they do not do anything about their CAS portfolio so they remind students the importance of the portfolio, if they do not have CAS portfolio, they cannot get their IB diploma.

School 6 had two ideas; CAS wall and CAS panel. CAS wall is the monthly advertisements of the CAS projects with posters and pictures and it will be opened to all students not just IB students. For the CAS panel (as suggested from the summer CAS workshop), they stated that three teachers will be responsible for the 12th grade students and the last interview will be a CAS panel. Students will explain their CAS

portfolio in the CAS panel and teachers will decide who will pass or fail from their CAS portfolio.

At the end of the webinar, J. Cannings concluded the webinar, thanked all participants and ended the webinar.

APPENDIX F: Follow-up webinar form

(This form was developed by the researcher.)

1.   Was the content of this webinar helpful to you? If so, how?

2.   Was the structure of this webinar helpful in terms of how you interacted with peers and the workshop leader? If so, how?

3.   What technological glitches were most disturbing to you?

4.   What are your suggestions for improving the content or delivery of such follow-up webinar sessions?

Feedback on the first CAS Webinar

All of the participants indicated that the content of the webinar was helpful for them. Almost all participants wrote about the benefits of hearing other schools' ideas, solution proposals and learning the view of what has been done in other schools. One participant noted that hearing about other schools' CAS program was helpful to connect other schools and check themselves. One of the participants stated that the webinar was a good opportunity to share their idea about CAS. Some participants were happy about finding answers of their questions about CAS. One of the participants indicated that he/she learned some other activities for CAS and how to integrate parents and community in those activities. Another participant thinks that these kinds of studies promote trying new things in the program and encourage the CAS coordinators/advisors to renew something in the program.

All of the participants found the structure of this webinar helpful in terms of how they interacted with peers and the workshop leader. They indicated that they easily interacted with other schools and learnt the progress of them. One of the participants indicated that the structure of the webinar was created according to their concerns which had been discussed at workshop in Koç School. During the webinar, participants shared their opinions and experiences; then the workshop leader shared his opinions and summarized the issues that discussed for each part of the webinar. Two participants indicated the format was very helpful. Besides, one participant indicated that talking one by one helped him/her to follow up easily and the webinar was very organized and was not boring.

Four participants noted no difficulty about technological glitches but three mentioned minor problems. These problems were unstable connections, unclear voices at times and frozen images. One of the participants indicated that he/she would prefer to have clearer sounds but blurry video. Because they are sharing knowledge, they are in need of hearing each other clearly. Another participant reported that when using the internet, you cannot control the system every time so there were only some negligible glitches.

Finally, participants offered some suggestions for improving the content or delivery of such follow-up sessions.

Technological/logistical suggestions were;

- Asking participants to have external microphones rather than internal laptop microphones,

- Organizing webinar hours in common free hours,
  Content suggestions were;

- Sharing necessary documents during the webinar,

- Sharing students' reflections discussing how reflection is written better,

- Integrating students for the following webinar to learn their weaknesses and strengths during the webinar,

- Getting suggestions from participants about how to teach to have different kind of reflection, how to have links to subject areas, TOK and CAS,

- Sharing outcomes of areas of improvements taken place until the next webinar session,

- Getting advice or some suggestions from J. Cannings about the implication of CAS in the direction of the new CAS guide,

- Getting J. Cannings to share some different CAS activity examples, different methods of reflection,

- Discussing about activities that we can do encourage teachers to be involved in CAS supervision

Also, following the workshop, Cannings offered some feedback about the lack of participation by students in the webinar. Given that students had been such an integral part of the initial workshop, he was surprised that no students participated in the first follow-up webinar. When asked about what students had done as part of the CAS teams since the summer CAS workshop, participants were all elusive in their responses. Cannings stated that all agenda items were covered satisfactorily during the webinar but he wanted to be more explicit in asking which of each school's plans had actually been implemented.

Feedback on the second CAS Webinar

All participants found the content of the webinar helpful. Most of them mentioned about the usefulness of hearing from other schools about their CAS development. One of the participants stated that hearing from students and other CAS coordinators about their ideas about CAS helps them to build a better CAS program and improve it. A participant indicated that second one was more helpful than the first webinar. He/she stated that seeing how some issues like CAS panels, interviews, and quality of reflections are handled by experienced ones widened their point of view. During the webinar schools talked about changes of CAS in their school and some participants stated that hearing about improvement and changes of other schools from both students and teachers' perspective is useful for them because other schools give different ideas about CAS to them. One of the participants stated that the webinar made him/her reflect on what percentage of their plans they could

actually make true in terms of CAS in their school. Besides, another participant indicated that this webinar is useful by reminding them importance of some issues like ATL, connections between core elements (CAS, TOK, EE), and involvement of teachers in CAS. Only one participant criticized that some parts were difficult to understand because the webinar was online.

Almost all participants found the structure of the webinar helpful in terms of how they interacted with peers and the workshop leader. Only two of them had some criticisms about that. One of them stated that communication system can be improved because he/she could not communicate with everyone. The other one stated that talking online was a little bit hard to follow sometimes.

Besides, almost all participants indicated that they had problems about hearing others because of the internet connection.

Lastly, participants had some suggestions for improving the content or delivery of such follow-up sessions. These suggestions were;

- Content agenda can be formed by the participating school CAS coordinators.
- Suggestions about the content can be taken from participants who attend the webinar
- Webinar hours can be organized better. They can be in common free hours.
- It may be held as a teleconference so that the vision won't hold the internet back. Voices would be clearer in that way.
- Similar webinars can be organized between schools at the level of students, faculty and coordinators.

Also, J. Cannings had some feedback of the webinar. He stated that it was useful to hear the opinions of the students about the progress that had been made. Also, he found this webinar was better as it forced schools to be much more specific about what they had done. Sound problem was disturbing for him like participants and he suggested trying other software instead of Hangouts.

APPENDIX H: Post-survey for CAS coordinators

Follow-up Survey about CAS Implementation

Since last June you and your CAS team have had a chance to make improvements to how CAS is implemented at your school. We would like to know what specific change you have made from your original plan, as well as what challenges you faced. Please respond to the following questions as accurately as you can.

1. What were the main action steps of your CAS improvement plan?

2. Which steps have you completed?

3. Which steps do you intend to complete later this year?

4. For any steps that you were unable to complete, what challenges did your CAS team face?

5. Did your school engage in other activities or workshops that helped to support the improvement of CAS? If so, please describe them briefly.

APPENDIX I: Matching Students: Same school & gender, & other similar characteristics

PreID < PostID	School	Gender	IB School Years (+/- 2)	University major interests, Hobbies
			Common Characteristics	
*154 < 214	Owl	Female	6, 7	Arts, music or drama, Cooking, Dancing, Debate
*148 < 194	Owl	Female	3, 2	Arts, music or drama, music
*144 < 230	Owl	Female	3, 2	Business, Arts or creative professions, Animal care, academic or science clubs
*151 < 212	Owl	Female	3, 4	Social sciences, Academics, Education, Animal care, Music, service work,
*149 < 210	Owl	Female	3, 2	Law or legal professions, Dancing
*145 < 207	Owl	Female	3, 4	Sciences, Engineering, Arts and crafts
*150 < 192	Owl	Female	3, 2	Animal care, Debate
*134 < 243	Bee	Female	5, 5	x
*136 < 238	Bee	Female	2, 5	Drama
*129 < 237	Bee	Male	x	Academic or science clubs
*142 < 234	Bee	Female	x	Uncertain, Medicine or health professions, Sports
*138 < 233	Bee	Female	5, 5	Business, Economics, Engineering, Arts and crafts, Cooking, Drama, Writing
*141 < 220	Bee	Female	x	Social sciences,
*86 < 228	Kedi	Male	3, 2	Sciences, Academics, Medicine or health professions
**7 < 240	El	Male	3, 4	Social Sciences, Business, Economy
**50 < 236	El	Female	4, 5	Arts, music, or drama
**44 < 242	El	Male	2, 3	Blank/Uncertain, business
21 < 239	El	Female	1, 2	x
133 < 241	Bee	Female	1, 2	Social Sciences, Business
128 < 231	Bee	Female	2, 2	Law or legal professions
135 < 235	Bee	Female	4, 5	Social Sciences, Law or legal professions

152 < 215	Owl	Male	3, 4	Arts, music or drama
155 < 205	Owl	Female	1, 2	Arts or creative professions
83 < 227	Kedi	Male	3, 2	Arts, music or drama,
88 < 226	Kedi	Female	1, 2	Sciences, Medicine or health professions
90 < 225	Kedi	Female	3, 2	Arts and crafts, Debate, MUN
82 < 221	Kedi	Female	3, 2	Sciences, Academic or Science Clubs
125 < 229	Ata	Female	12, 10	Business, Engineering, Medicine or Health professions
109 < 219	Ata	Male	x	Social science, business, economics
104 < 216	Ata	Female	x	Humanities, Non-profit sector
115 < 211	Ata	Female	x	Sciences, Engineering
126 < 204	Ata	Female	10, 10	Blank, Architecture, Arts and creative professions
121 < 199	Ata	Female	x	Sciences, Academics
127 < 197	Ata	Female	x	Arts, music or drama
124 < 186	Ata	Female	x	Sciences, Outdoor Activities
123 < 174	Ata	Female	x	Sciences, Art and crafts, Music
99 < 170	Ata	Female	x	Arts, music or drama, Animal care
97 < 218	Ata	Male	x	Sciences, Engineering, Sports
92 < 208	Ata	Male	x	Engineering, Sports
96 < 191	Ata	Male	x	Engineering, Sports
95 < 189	Ata	Male	x	Business, Engineering, Music, Outdoor activities
117 < 161	Ata	Male	3, 1	Sciences, Medicine or health professions

*exactly same students
**students that did not write any ID number or name in the pre-survey but most probably same with another students in post-survey with almost completely same information

APPENDIX J: Analysis results of school surveys except School 2

Since almost all of the participant students of School 2 were 12th grade students, paired sample t-test was conducted for matched students except School 2 students to see if workshop and webinars cause a difference in these schools. The test was conducted for the same subscales of the Section 2, 3 and 4 of surveys and all results about school culture, supports for CAS and outcomes of CAS sections were summarized here. However, no statistically significant difference was found for any of the subscales except a decrease of feedback subscale of Section 2.

Analysis showed that only pre and post-survey scores of curriculum integration subscale of School Culture section pf the survey (Section 2) has a correlation, p=0.019. However, Pre and post-survey scores of other subscales mission and vision, feedback, teacher involvement and community has no correlation.

There is no significant difference in scores of how students perceive mission and vision shown through clubs and school activities that match with CAS aims for pre-survey (M=3.70, SD=0.75) and post-survey (M=3.71, SD=0.67); t(26)=-0.045, p=0.964.

Also, pre-survey (M=3.41, SD=0.94) and post-survey (M=3.36, SD=0.92) scores of how students perceive integration of academic curricula across subjects, or made practical has no significant difference; t(25)=0.252, p=0.803.

However, feedback scores show a decrease. There is a significant difference in scores of how students perceived the value of feedback from teachers overall for pre-

survey (M=3.58, SD=0.82) and post-survey (M=3.10, SD=0.91); t(25)=2.170, p=0.040.

Lastly, there is no significant difference in scores of how students perceive the relations between their schools and the local community for pre-survey (M=3.71, SD=0.90) and post-survey (M=3.60, SD=0.76); t(26)=0.572, p=0.572.

Results for Supports for CAS section (Section 3) show that only building community subscale has a correlation between pre and post-survey scores, p=0.002. However, other subscales reflection, feedback, coherence and teacher involvement has no correlation. Also none of these subscales show a significant difference between pre and post-survey scores.

There is no significant difference in scores of how well CAS supports students' CAS reflection process for pre-survey (M=3.25, SD=0.54) and post-survey (M=3.05, SD=0.84); t(26)=1.166, p=0.254.

Pre-survey (M=3.22, SD=0.72) and post-survey (M=3.13, SD=0.92) scores how well students perceived the schools to be giving feedback about CAS choices, reflection, etc. has no significant difference; t(25)=0.390, p=0.700.

Besides, pre-survey (M=3.22, SD=0.83) and post-survey (M=3.11, SD=0.98) scores how well students perceived schools as supporting curriculum coherence with respect to the integration of CAS has no significant difference; t(26)=0.559, p=0.581.

There is no significant difference in scores of how well students perceived the schools to have teacher involvement in CAS for pre-survey (M=3.30, SD=0.91) and post-survey (M=3.05, SD=0.89); t(24)=1.107, p=0.279.

Lastly, there is no significant difference in scores of how well schools build the community (e.g., parents and support organizations) for maintaining CAS for pre-survey (M=3.62, SD=0.89) and post-survey (M=3.61, SD=0.67); t(25)=0.065, p=0.948.

Final Outcomes of CAS section (Section 4) of surveys has a correlation for all subscales. However, none of them has a statistically significant difference between pre and post-surveys.

Pre and post-survey scores of how well students think they have obtained self-knowledge, including awareness of their strengths and areas for growth have a correlation, p=0.002. However, there is no significant mean difference in self-knowledge scores for pre-survey (M=3.69, SD=0.60) and post-survey (M=3.88, SD=0.79); t(25)=-1.483, p=0.151.

Results of analysis also showed that there is a correlation between pre and post-survey scores of how well students show commitment and perseverance, p=0.002. However, it's pre-survey (M=3.75, SD=0.67) and post-survey (M=3.62, SD=0.85) scores has no significant difference; t(24)=0.862, p=0.397.

Lastly, that there is a correlation between pre and post-survey scores of how well students consider ethics of their choices and actions, p=0.049. However, there is no significant mean difference in the ethics scores for pre-survey (M=3.78, SD=0.71) and post-survey (M=3.80, SD=0.91); t(25)=-0.107, p=0.915.

APPENDIX K: Parent assent form

Creativity Activity Service (CAS) Survey Research
May 2016

Your child's school is part of a research study to help us learn about how a CAS team workshop this summer helps your school to improve its CAS program. We invite your child to participate in a short survey that will be given during the school day. Your child's participation will help us learn more about student experiences of CAS.

What is the purpose of the survey?
The survey examines students' attitudes about aspects of the school culture that relate with CAS, how well they feel CAS is supported, and their views about CAS outcomes. Findings will help us understand how CAS is implemented across schools and its perceived outcomes. We will ask students to complete the survey again next winter to see if the CAS program at your school is perceived to have improved based on CAS Improvement plans developed from the summer CAS team workshop.

How long will the survey take?
The survey will take about 20 minutes if your child fully responds to each survey item.

Will my child's responses remain confidential?
Yes. All responses will be anonymous and not associated with any particular student names.

Who should I contact if I have questions?
You may contact the supervising researcher, Dr. Robin Ann Martin at email: RMartin@bilkent.edu.tr
or phone 0312-290-2922. If you would like to speak with someone in Turkish about this research, please call the Bilkent University Graduate School of Education, 0312-290-2950.

Name and Signature
I have read (or someone has read to me) the above information.

Student's name: _____ Parent's name: _____

Please check the appropriate box:

    ___I agree for my child to participate in this study

    ___I do **not** agree for my child to participate in this study

_____   _____
Parent signature   Date

APPENDIX L: Student and teacher consent form

[This form is posted as preliminary page on the Google survey]

What is the purpose of this survey?
This study is examining the implementation of the Creativity Action Service (CAS) in relation to the school culture, supports for CAS, and its outcomes. The findings will help us to develop better strategies for improving CAS across schools, especially concerning whether a team approach to CAS is helpful. Due to your direct knowledge and experiences of CAS, you are being asked to participate. Our goal is to learn your honest thoughts about your school culture and CAS, including strengths and weaknesses.

If you agree to participate in this research, please click the "OK" to each of the following points.

How long will the survey take?
The survey will take about 20 minutes if you respond carefully to each survey item.
__Ok.

Will my responses remain confidential?
Yes. We only collect your ID numbers or names to match them with a post-survey that we will give next year to monitor for changes. Your names and answers will not be shared with anyone. All responses will be anonymous and not associated with any particular names.
__Ok.

What are the potential risks and benefits of taking part in this survey?
We do not anticipate any risks. If there are any questions that you do not wish to answer, you may skip those items. Your participation will help us learn more about CAS.
__Ok.

Who should I contact if I have questions?
You can contact the principal investigator, Dr. Robin Ann Martin, email: RMartin@bilkent.edu.tr
or phone +90-312-290-2922, or the Bilkent MA thesis student noted at the end of the survey.
__Ok.

Robin Ann Martin, PhD Bilkent University Graduate School of Education Ankara, TURKEY 06800 Email: Rmartin@bilkent.edu.tr Ph. +90-312-290-2922 Skype: robin.ann	Ezgi Yazgan, MA Thesis Student Bilkent University ezgi.yazgan@bilkent.edu.tr

APPENDIX M: Time line

Dates	Activity
April-May 2016	Collect parent permission forms
May-June 2016	Collect pre-survey data from participating schools
June 27-28, 2016	CAS Team Workshop, at The Koc School. Conduct workshop starting questionnaire; collect workshop feedback forms at end. Summarize workshop and delivery feedback.
Oct, 2016	Follow-up Webinar #1
January 2017	Follow-up Webinar #2. Collect feedback on follow-up webinars.
February 2017	Collect post-survey data from participating schools
March-April	Data analysis of pre/post findings