

**The Middle Years Programme's
areas of interaction:
from theory to practice**

*A practiced based research into the practice of the application
of the areas of interaction in the Middle Years Programme at
Arnhem International School and Rijnlands Lyceum
Oegstgeest.*

Lugt, D & Oosterhoff, M

1 Introduction

The Middle Years Programme is an International Baccalaureate programme designed for students age 11 -16. Within the Middle Years Programme (MYP) of the International Baccalaureate Organisation (IBO) the areas of interaction have a central role. Recent developments show a ‘shift’ in the importance the IBO has assigned the use of the areas of interaction. The IBO wants teachers and schools to pay more attention to the use of these areas of interaction while teaching and planning. This ‘shift’ becomes apparent when comparing the new MYP guide (MYP: from principles into practice) with older guides. The difference is in the wording; in the new guide the usage of the word: ‘must’ appears throughout the text. Schools and teachers now ‘must’ follow certain guidelines. This also applies to the use of the areas of interaction. The areas of interaction ‘must’ now be mentioned explicitly while teaching.

This ‘shift’ is confirmed by Alexandra Peticato, an independent consultant for the IBO who recently visited AIS to evaluate the MYP programme. When asked if the IBO’s guidelines regarding the use of the areas of interaction has changed over the years, she answered: *“In the past they [the areas of interaction] could be used explicitly, but they didn’t necessarily have to be explicit. Now they do. The reason for this is that many people asked why in the MYP are there the areas of interaction?”* Besides mentioning them explicitly in class, the areas of interaction also have to feature in the planners. MYP coordinators at MYP schools are supposed to check the usage of the areas of interaction by their teachers.

The MYP coordinators at Arnhem International School (AIS) and Rijnlands Lyceum Oegstgeest (RLO) expressed a desire to gain insight into the practical application of the areas of interaction at their school. For the researchers it provided an opportunity to become more familiar with the programme themselves.

This research, therefore, aims at looking at the practical application of the areas of interaction at two schools in the Netherlands: Arnhem International School and Rijnlands Lyceum Oegstgeest thereby providing insight into the practice at these schools. This article aims at providing students educators with practical research advice and suggestions for further research into this topic. Furthermore it is meant for BITEP students and beginning MYP teachers interested in doing research about MYP.

2 Theoretical outline

With the MYP, the IBO hopes to educate the decision makers of tomorrow: *‘The responsibilities of educators is no longer to prepare good mathematicians, good biologists or good historians. The mission of schools is to prepare young people – the decision makers of tomorrow – to live in a complex multicultural society undergoing a process of rapid change and opening up a new world ... [G. Renaud 1991]’¹*. To accomplish this, the MYP focuses on holistic education and subject integration. Subjects are not to be studied as a body of

¹ *The origins, philosophy and fundamental principles of the IB Diploma and MYP, page 13*

knowledge only, but in connection with other subjects and the world around them. This helps the students to better retain and understand what they are leaning.

“The aim and focus of holistic learning is making connections, e.g., connections between subjects or between thinking and intuition.”²

The MYP aims at education based on constructivism in order to transfer knowledge. Constructivism is a theory of knowledge that became widely accepted by the late 1980’s. According to Roy Killen: *“In the past 30 years, our understanding of how people learn has changed dramatically. New approaches to cognitive research and development psychology suggest that learning is a much more individualised process than was previously thought. It is now generally accepted that most people learn best through personally meaningful experiences that enable them to connect new knowledge to what they already believe or understand. Such **constructivist** views of learning have led to a redefinition of effective teaching.”³* It is based on the idea that students construct their knowledge based on their existing mental models. Simply put, knowledge is constructed by the experience of the person. *“Learning, therefore, is simply the process of adjusting our mental models to accommodate new experiences.”⁴* *“Good teaching is no longer about helping students to accumulate knowledge that is passed on to them by the teacher; it is about helping students to make sense of new information (no matter what its source), to integrate new information with their existing ideas and to apply their new understanding in meaningful and relevant ways.”⁵*

The vehicle the MYP uses to transfer knowledge, to show connections between the content and the context (the world around them), to construct knowledge, and to integrate the different subjects, the MYP uses the areas of interaction. *“These provide globally significant **values-related perspectives** through which much of the subject curriculum must be viewed.⁶ Through the context for learning provided by the MYP’s **areas of interaction** ...students can come to realize that most real-world problems require insights gained from a variety of disciplines. ... The areas of interaction serve to emphasize the relationships between the subject groups and provide a global view of situations and issues.”⁷*

If students need to be able to see the connection between the various subjects they are studying, it is necessary to write a curriculum that makes a puzzle out of all the pieces students are studying, so that both students and teachers can see the whole picture. In other words, we need a coherent curriculum. *A “coherent” curriculum is one that holds together, that makes sense as a whole; and in parts, whatever they are, are unified and connected by that sense of the whole.⁸ ...coherence does not mean simply clarifying purpose in the existing curriculum. Rather, it suggests that creating coherence involves connecting parts of pieces of the curriculum, identifying*

² *Holistic Learning: A Teacher's Guide to Integrated Studies. (abstract)*

³ *Effective teaching strategies, page 2*

⁴ <http://www.funderstanding.com/content/constructivism>

⁵ *Effective teaching strategies, page 2*

⁶ *Values, Constructivism and the IB curriculum, page 4*

⁷ *MYP: From principles into practice, page 10*

⁸ *Towards a coherent curriculum, Introduction page 3*

meaningful contexts for information and skills, and helping young people and adults to make sense of learning experiences."⁹

The importance of a coherent curriculum is made clear by a study conducted by Schmidt, Houang and Cogan. Their study shows that a lack of a coherent curriculum is partially responsible for the America's poor average achievement when it comes to math students.¹⁰

In order to come to a coherent curriculum in the MYP programme, teachers are supposed to pay attention to vertical as well as horizontal planning. Vertical planning focuses on the development of the student from year one through five. Horizontal planning focuses on planning within the same year level between the different subjects. Horizontal planning ensures coherence between the subjects, throughout the years and subject integration. The focus is to plan the content through the context; the areas of interaction.

3 Research question and hypotheses

This research sets out to see if the areas of interaction, the core of the MYP and the vehicles through which the IBO intends to transfer knowledge, are actually mentioned and used in the classroom by the teachers as the IBO intends them to be used. For this reason we have set up the following research question:

What is the practice of the application of the areas of interaction in the MYP at Arnhem International School and Rijnlands Lyceum Oegstgeest?

This has led to the following sub-questions:

1. What is the teachers' knowledge on how to apply the areas of interaction according to the IBO guidelines?
2. Do the areas of interaction actually feature in class and how often?
3. Are students aware of the areas of interaction when mentioned in class?

Because of the fact that both AIS and RLO have undergone the application and authorization of the IBO it can be expected that at both schools the teachers are knowledgeable on the IBO guidelines and are using the areas of interaction in class. It is also expected that the students are aware of the areas when mentioned in class, since the majority of the students has been a student in the MYP for at least a few years.

4 Method

AIS offers two of the IBO programmes. The school has been IB DP authorized since 1989 and MYP authorized since 2004. The school is housed in the building of the Lorentz Lyceum in Arnhem and is state funded.

The Rijnlands Lyceum Oegstgeest is a bilingual school that offers Dutch and International programmes, both fully accredited by the Dutch Ministry of Education.

⁹ *Towards a coherent curriculum, Introduction page 4*

¹⁰ *A coherent curriculum. The case of mathematics, page 16*

RLO offers the International Baccalaureate Middle Years Programme for ages 11 to 16 and the International Baccalaureate Diploma Programme for ages 16 to 18. They have offered international education since 1983 with the introduction of the International Baccalaureate Diploma Programme.

At both schools, all MYP4 classes were part of the research group. At AIS the MYP 4 student populations consisted of 22 students divided over two classes. Eight students have been studying in the programme for three years, three for two years and seven started in the MYP at the beginning of the school year 2008 - 2009. At RLO the MYP 4 student populations consisted of 34 students divided over two classes. Many of the students have studied in the programme for 3 years although there are also students who only started at the beginning of the school year 2008-2009.

The teachers who participated in our research did so voluntarily and were humanities and science teachers of MYP4. The group of teachers was made up of both experienced and new teachers to the MYP. At AIS as well as RLO all teachers taught different programmes, i.e. DP and bilingual programme. At RLO some teachers even taught the Dutch programme. Furthermore, the MYP coordinators of both schools have had at least four years of experience teaching in the MYP, and at least two years experience as the MYP coordinator of their school.

To collect the necessary data several methods were used. Students were given a questionnaire prior to the research. The first question (Name the five areas of interaction) provided data concerning the basic knowledge of the students concerning the areas of interaction. When students were not able to name the areas of interaction it would be more difficult for them to recognize them in class. For the second question (In how many of the lessons are the areas mentioned?) students filled out the information per subject (geography, biology, economics, history, physical education, mathematics, etc). For data processing the data were grouped together in their respective subject groups (economics, geography, history put together for humanities and biology, chemistry, physics for sciences). It was the objective to look at the subject group, not the individual subjects.

Planners were studied to determine which areas of interaction the teacher intended to use in class. This information was needed by the observers in order to recognize the intended areas while observing classes. The areas of interaction were expected to be mentioned in the planners. This is a requirement of the IBO. For both AIS and RLO the planners were designed by the teachers themselves and were therefore all different.

Next, classes were observed to investigate if the areas of interaction were actually mentioned in class. While observing classes, score was kept each time the intended area of interaction was mentioned explicitly. For this a 'scorecard' was created. Since there were two observers, there might have been differences in the way they observed a class. A result could have been that the outcome of the observation was influenced by the observers. Therefore, the following was decided: checkmarks were only written when the intended area of interaction was mentioned explicitly. Videotaping classes proved to be too time consuming and this was decided against.

At the end of each observed class, students were asked to fill out a short questionnaire asking if they noticed the use of the area of interaction.

At the end of the observations, two MYP 4 teachers were interviewed per school to gain a better understanding about their knowledge on how to use the areas of interaction in the classroom and when planning, and to find out what support and

instruction they are getting from their school and MYP coordinator. Neither the teachers nor the coordinator got a copy prior to the interview to ensure the data were accurate. Preparation could lead to incorrect results when checking what participants really know.

Finally both MYP coordinators were interviewed in order to find out whether or not the teachers get enough support from the school to make sure they are knowledgeable about the IBO principles and the application of the areas of interaction. They were also asked how they both check this knowledge and the teachers' application of the areas of interaction.

The information of the observations was compared with the data collected from the students at the end of class in order to find out if the students are actually aware of the use of the areas of interaction in class.

All names mentioned in this report are fictitious, to protect the privacy of the teachers willing to help in this research.

5 Results

5.1 Questionnaire

The results from the questionnaire showed that 15 of the 18 students who filled out the questionnaire at AIS were able to mention all five areas of interaction, 2 students knew four and 1 student knew 2 areas of interaction. At RLO, 11 of 19 students were able to mention all five areas of interaction, 6 students knew four and 3 students didn't know any.

Figure 1. shows the results of the second question of the questionnaire, which is the percentage of the classes in which the areas of interaction are mentioned according to the students at AIS. The students had 6 response choices: *every class*, *usually*, *often*, *sometimes*, *seldom* and *never*.

For humanities the following trend can be seen. According to almost half the students (45%), the areas of interaction are mentioned in almost every class (usually). The Humanities did not score lower than 'sometimes' and scored high for 'usually'. For the sciences the student responses are distributed around often but no clear trend can be distinguished.

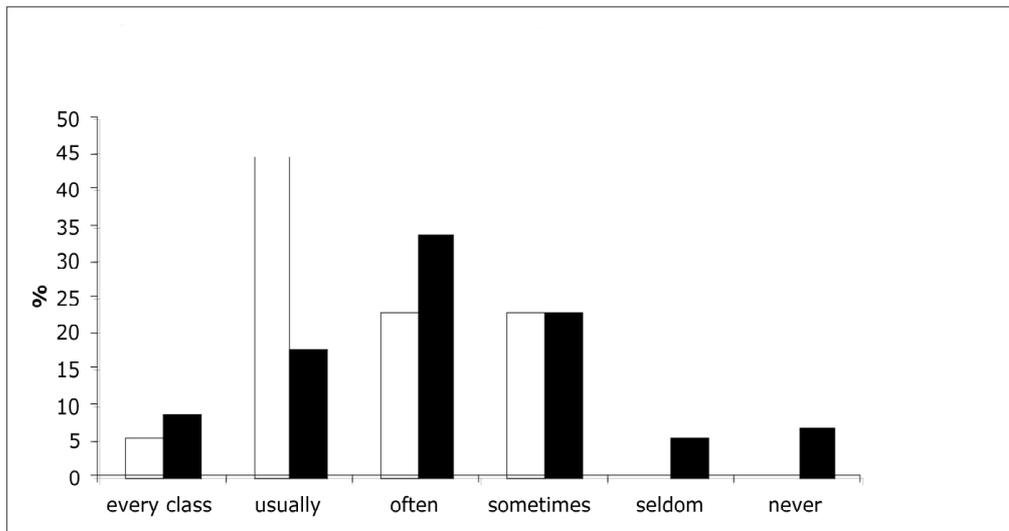


Fig 1. The number of classes per subject group in which the areas of interaction are used according to the students at AIS in percentages. (In black sciences, in white humanities)

Figure 2. shows the results to the second question of the questionnaire for RLO. As is shown in figure 2, a trend can be seen towards ‘sometimes’, ‘seldom’ and ‘never’. Here there is no difference between the sciences and humanities. Furthermore this figure shows that overall the areas of interaction are mentioned more in humanities than in the sciences.

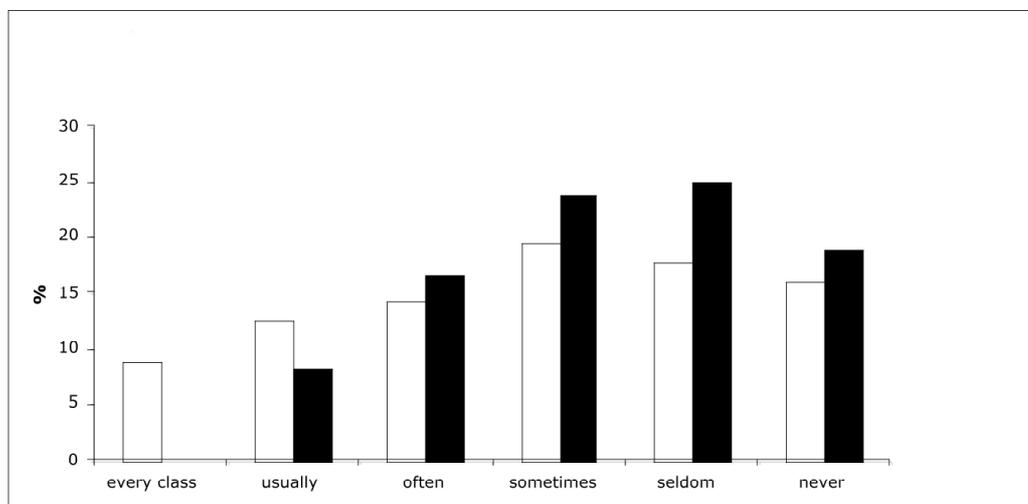


Fig. 2. The number of classes per subject group in which the areas of interaction are used according to the students at RLO in percentages. (In black sciences, in white humanities.)

While the focus of the study was on the two subject groups humanities and science, three other subject groups; mathematics, arts and physical education (PE) were also studied.

For AIS the results show that in the PE class the students report that the areas of interaction were seldom to never mentioned. In the subject group Mathematics the responses were more equally distributed across the response options ‘often’ and

‘never’. For arts there was an interesting dissociation since a little over 33 % of the students claimed that none of the areas of interaction was never used in class, while 11% of the students reported that at least on of the areas on interaction were mentioned in every class.

At RLO the results showed that the subjects did not differ from each other and that the trend is that the areas of interaction were either mentioned ‘sometimes’ or ‘seldom’.

5.2 Planners

In almost all the planners that were checked an intended area of interaction was mentioned. The planners of one of the humanities teachers at RLO did not mention any area of interaction. The researcher did not know what the intended area of interaction was for these classes.

5.3 Classroom observation

Lessons were observed in both schools to see if the planned areas of interaction were mentioned. At AIS, five humanities classes were observed. In four of these classes, the intended area of interaction was mentioned explicitly. Of the observed science classes this was four out of eight. Overall that is eight out of the thirteen observed classes. At RLO, three humanities classes were observed. In one of the three humanities classes the intended area of interaction was mentioned explicitly. Of the observed science classes this was also one out of three.

A comparison between the observations of the researchers and the ‘observation’ of the students was also conducted. The results are shown in tables 1 and 2. The column ‘observer’ shows if the intended area was mentioned in that class explicitly or not. In the column ‘students’ we find the percentage of the students that gave the same answer as the observer.

Percentage of students whose answer (Was the intended area of interaction mentioned during this class?) corresponded to the observation of the researcher at AIS

Subject Group	Classes observed	Observer	Students
Humanities	Class 1	Yes	92%
	Class 2	Yes	64%
	Class 3	No	70%
	Class 4	Yes	100%
	Class 5	Yes	100%
Sciences	Class 1	Yes	100%
	Class 2	Yes	83%
	Class 3	Yes	92%
	Class 4	No	33%
	Class 5	Yes	80%
	Class 6	No	60%
	Class 7	No	60%
	Class 8	No	71%

Table 1

Percentage of students whose answer (Was the intended area of interaction mentioned during this class?) corresponded to the observation of the researcher at RLO

Subject Group	Class observed	Observer	Students
Humanities	Class 1	Yes	59%
	Class 2	No	21%
	Class 3	No	29%
Sciences	Class 1	No	27%
	Class 2	No	21%
	Class 3	Yes	36%

Table 2

5.4 Teachers' interviews

The results of the teachers' interviews show that all teachers have worked in the MYP for quite some time. At AIS and RLO the teachers were familiar with the IBO's ideas behind using the areas of interaction. All teachers acknowledged getting enough support and opportunities to educate themselves regarding the MYP.

5.5 Coordinators' interview

The data from the interviews with the MYP coordinators at both schools show that they think their teachers are knowledgeable when it comes to the IBO principles and at both schools the teachers are given enough schooling facilities to get to grips with the MYP principles. Neither coordinator has mentioned visiting classes and seeing for themselves if and how the areas of interaction are being mentioned in class at all. Brenda states that she is not aware of what actually goes on in the classrooms.

6 Conclusion

6.1 Answering the sub-questions

In this section the questions asked at the beginning of this chapter will be answered. The quality of the results will be discussed at the same time.

6.1.1 What is the teachers' knowledge on how to apply the areas of interaction according to the IBO guidelines?

From the interviews conducted with the MYP coordinators it has become clear that both AIS and RLO teachers are well aware of the IBO principles and overall

guidelines concerning the use of the areas of interaction. They know this from the training teachers have received, from their answers at meetings and from ongoing reflection when problems need to be solved. At AIS, however, the MYP coordinator, stressed the fact that she was not sure about the new teachers. In this case she was referring to the teachers who had recently joined the school and hadn't had the opportunity yet to attend one of the IBO's workshops, or had time to work through all the MYP documentation.

In both interviews it was made clear that at both schools the teachers are given enough schooling facilities to get to grips with the MYP principles. Also in both schools the MYP coordinators are always available to answer IBO related questions. During the interview all teachers acknowledged (themselves) they get enough training and all claim to have sufficient knowledge.

Further evidence of their knowledge on how to apply the areas of interaction can be found in the planners. According to the IBO guidelines, while planning, teachers must make use of the areas of interaction. The areas of interaction must therefore also feature in all planners. In all planners of the teachers at AIS the areas are mentioned according to the IBO guidelines.

At RLO, however, one of the teachers did not mention any area of interaction in her planner. The reason for this was that it takes a lot of time to place all the subjects in the prescribed format, the teacher simply hadn't done that yet for this subject.

Because the interview was not in-depth enough, the validity of the teachers' answer about their own knowledge cannot be used to draw specific conclusions.

6.1.2 Do the areas of interaction actually feature in class?

6.1.2.1 AIS

Looking at the results the answer to this question would be affirmative, they do feature in class, but not in all classes. In eight out of the thirteen classes the intended area of interaction was mentioned explicitly. It is worthwhile, however, to take a closer look at the results of the teachers separately to see why this is the case.

Two of the three observed science teachers hardly mentioned the areas of interaction. This can be attributed to either lack of experience on the teachers' part (as was the case with one of the observed teachers), or the fact that a teacher finds it hard to change from old to new practice. The third teacher always mentioned the intended area of interaction each time. She is also the MYP coordinator, is very experienced and has in depth knowledge of the programme and how to apply the philosophies. The humanities teachers usually use the areas of interaction. One of the two observed humanities teachers at AIS has been with the programme from the start, is an area leader and has played an important role setting up the programme at the school. The other teacher has been teaching at the programme for two years.

This implies that knowledge, experience and drive are factors that influence whether or not the areas are mentioned in class. This corresponds with the initial hypothesis.

6.1.2.2 RLO

It can be concluded that the observed humanities and sciences teachers seldom mention the areas of interaction planned for that lesson. The reason for this is, in the

case of sciences, that the teacher does not mention the areas of interaction explicitly but implicitly. For the humanities only one teacher can be taken into account because one planner did not mention any of the areas of interaction. So, only the teacher with the least experience was left over. Basing conclusions on one experienced teacher for a whole department would not be correct.

As has become clear from the discussion about AIS, the data from the students' questionnaire can not be used to answer this question.

From the data collected it appears there is a distinctive difference between the ways the areas of interaction are applied at both schools. It is already argued that only a small amount of data has been collected, too small to draw any major conclusions on. It does look, though, like there is a distinctive difference between the ways the areas of interaction are applied at both schools. At AIS, as opposed to RLO, the areas of interaction are mentioned more often in the planners as well as in the classroom. However, the researchers cannot conclude that MYP teachers at RLO are less inclined to use the areas of interaction in their classes. The amount of data is just too small. According to the MYP coordinator at RLO the law of the handicap of a head start might have come into play at her school.

6.1.2.3 Validity of the data

The question that has to be answered is whether or not the teachers, while being observed, were influenced in any way. Although no valid data are available to answer this question, it has become clear from informal discussion with the students, that this has been the case, at least at AIS. The students mentioned that they noticed the areas were mentioned more frequently and in more classes than normally while the IBO evaluation team was present and when the researcher in question attended their classes while collecting data. This implies that little to no value can be attributed to the collected data.

6.1.3 Are students aware of the areas of interaction when mentioned in class?

To answer this question, the results from question one of the questionnaire and the comparison between the observations of the researchers and those of the students were used.

6.1.3.1 AIS

Most AIS students were able to answer the question to name the five areas of interaction. The result is not surprising when taken into account that most students have been in the programme for a considerable time and the fact they have all followed the introduction into the MYP. The results might have been influenced, however, by the fact that the MYP programme model is posted throughout the school, so students could have copied these

Table one shows that in seven of the eight observed classes where the intended area of interaction was mentioned a large majority of the students (80 percent or more) was aware of this. This implies that students at AIS are aware. Students are less capable to give a correct response when the intended area of interaction is not mentioned. A possible explanation as to why some students still filled out they heard

the area being mentioned, might be that students assumed this was the case, but they didn't really pick up on it. They might have filled out they had heard the area being mentioned not to look unaware.

Apart from this it is difficult to draw conclusions from these data. For that the group of students wasn't big enough. Overall, the results from AIS seem to correspond with the initial hypothesis.

6.1.3.2 RLO

Even though 40% of the students know all the five areas of interaction, most students hardly pick up on the areas of interaction that have been mentioned by the teacher. An explanation for this can be that the teacher mentions the areas of interaction implicitly resulting in that the students can't pick up on them. Or, the students didn't feel like filling out the forms given to them after each lesson. Many times their lack of cooperation could be seen on the forms; many of them were purposefully filled in with irrelevant words.

6.2 Answering the main research question

What is the practice of the application of the areas of interaction in the MYP at Arnhem International School (AIS) and Rijnlands Lyceum Oegstgeest (RLO)?

The data suggest a difference between both AIS and RLO. At AIS the areas of interaction are mentioned in more of the classes than at RLO. An explanation for this difference is, as has been said earlier, that teachers at AIS intentionally mentioned the areas of interaction more often because of the fact they were being observed.

Students at AIS also seem to be more aware of the fact the intended areas of interaction are mentioned in class. A reason for this can not be gained from the available data, although the students at RLO did seem to have influenced the outcome of the results for this school.

Still, one cannot conclude that at AIS, the practical application of the areas of interaction is better at AIS than at RLO. Too many factors influenced the results and too little data was collected to base any real conclusions on. Therefore, in the next section, suggestions will be given for further research.

6.3 Suggestions and advice for further research into the application of the areas of interaction

This has been an investigative research; an investigation into the practical application of the areas of interaction at two schools in the Netherlands. Unfortunately, based on the data collected, no real conclusions can be drawn. The research has, however, led to a deeper understanding of the complexity of the matter at hand and a better understanding of the procedures to be followed in order to answer the main research question. In order to gain real deep understanding into the application of the areas of interaction at a school, many of the factors researched during this research will have to be researched in more detail. In other words, more data need to be collected. One could even argue that each of the following discussions are worthy of a complete research in itself. The first discussion deals with suggestions

on how to improve this research. The other three discussions are closely related to the first one, but deal with possible follow-up research

6.3.1 Classroom observation

In paragraph 4.1.3.3, 'validity of the data', it was mentioned that the researchers have a strong suspicion that some teachers at AIS mentioned the areas of interaction more explicitly and more frequently than they would have done if their classes wouldn't have been observed. This was hinted at by the teachers themselves and confirmed by informal conversations with the students. Unfortunately this only became clear after the observations were conducted. This effect can in future research be dealt with. This effect, the observant changing regular behavior is called *the observer effect*. According to the association of qualitative research, the observer effect deals with "*the difference that is made to an activity or a person by it being observed. People may well not behave in their usual manner whilst aware of being watched, or when being interviewed while carrying out an activity.*"¹¹ Dealing with this effect as a researcher requires experience. "*Many forms of research involve similar problems and allowing for these in interpretation is a key professional skill for researchers. Commercial researchers actively use their experience of conducting many interviews and observations over time, building useful benchmarks about observer and interviewer effects in general.*"¹²

The reason why teachers would display this behaviour in this case might be found in the topic being researched; the areas of interaction. The areas of interaction form the core of the MYP. Their importance has been discussed in chapter one. The research, then, was aimed at finding out if the essentials of the programme were being implemented as expected by the IBO. In other words, are teachers doing the right thing? Knowing one is being observed to check just this, and the fact that the results were going to be shared with the MYP coordinator and the head of the department, could have led to the afore mentioned observer effect. Teachers will make sure they mention the areas while being observed displaying they are following the wishes of the IBO and are, thus, doing a good job.

The question now, considering the delicateness of the topic being researched and the observer effect, is how to conduct this research in order to collect data that are valid enough to base conclusions on.

First, those in charge of the programme should discuss the objective of such a research with the teachers in question openly. Focus should be on the *why* of the research; obtaining information to improve the programme, not to pass judgment. The MYP coordinator should try to create a '*we*' and '*us*' atmosphere. It is necessary to stress the fact that those being observed are not being scrutinized, but that the aim of the observations is to improve as a department, a school and as a professional. Teachers have to feel safe and secure being observed and not get the feeling they are being judged for their actions. The research should be put in the light of improving, not assessing. The teacher has to feel comfortable to do what he or she is always doing.

¹¹ The association of qualitative research, the observer effect

¹² The association of qualitative research, the observer effect

Second, there should be a feeling of absolute anonymity amongst the participants (in the research conducted here, this was not possible due to time constraints). This would make the teachers feel more secure about not being judged personally. Although in this research the teachers have absolute anonymity for the reader not familiar with the schools, for their own schools in question they have not. It is possible for those working at the school to deduce which results go with which teacher, since everybody knows which teachers were being observed.

Third, more classes and more teachers need to be observed. It is clear that more data are needed to answer the research question. Observing more teachers also helps to guarantee anonymity. The ideal situation, of course, would be to observe each of the teachers at least five or six times. Since this would be too large a task, a large enough sample would have to be determined.

The following procedure could be followed: The MYP coordinator should first try to create the correct conditions and atmosphere in the school. Instead of having an observer present in a classroom, only use a camera. Place a camera in each of the classroom and at random moments tape the class. When recording a class, tape the entire class. Tape a large enough number of classes. From these recordings, randomly select a large enough number of recordings. Use these recordings as your data. Use the planners to determine the intended area of interaction, use a similar tick list as was used during this research to determine in how many of the classes the intended area of interaction is mentioned explicitly.

It is clear that a research like this requires more time and resources than were available during this research. It would be advisable to conduct the research over a time span of maybe one year, making sure the start and / or end of the school year do not influence the results. It might even be suggested to spread this research out over a couple of years thereby making it possible to identify variability between different academic years.

6.3.2 Teachers' knowledge

During this research teachers were asked about their knowledge of the programme and if they mention the areas of interaction in the classroom. Another, maybe more interesting, issue that might be investigated is whether or not teachers actually feel comfortable using the areas of interaction. The previous discussion leads us to believe some do not. In order to find out if this is really the case, a follow-up research should be geared towards answering the following questions:

- Do teachers have difficulties changing their regular content based teaching styles with a context based teaching style? Do teachers have trouble letting go of old practices? Do teachers have difficulties coming to grips with using these areas of interaction?
- What are some of the difficulties they have encountered by implementing the areas of interaction? Are they struggling with them while planning and teaching?
- What do teachers really think and feel about using these areas? Do they believe in the concept of using the areas of interaction?

A more in-depth interview should be conducted in order to find answers to these questions. The number of teachers being interviewed should be large enough to base conclusions on. Classroom video recordings (see previous section) should be

discussed with the teachers to get a deeper understanding of their ideas and behavior in the classroom. (Unit) planners should also be discussed with the teachers to find out if and where there might be difficulties. Again, teachers should feel comfortable answering questions like this. Teachers should have the feeling the aim of the research is to improve the programme's implementation in the school and to help the teachers becoming more comfortable and experienced using the areas of interaction. They should not have the feeling they are being scrutinized. Information derived from such an in-depth research could not only benefit the teachers and schools in question, but teachers teaching in the MYP around the world. It would give the IBO more insight into the problems and difficulties arising when trying to implement the programme enabling them to give more and better guidance during their workshops.

6.3.3 Students' knowledge

The next issue to address is the students' knowledge. Only asking students whether or not they can mention the areas of interaction, as was done during this research, does not provide data to conclude anything about the *knowledge* regarding the areas of interaction of the students. In order to get a better understanding of the students' knowledge more research should be conducted. A questionnaire without questions in which there is a specific reference to the areas of interaction should be designed for this purpose. Specific reference to the areas of interaction would lead the students to much and would result in tainted data.

This questionnaire could also be used to the effectiveness of the method in which the students are being informed about the areas of interaction. This could be done by giving students the afore mentioned questionnaire before and after the instruction. This could benefit the school by assessing their own instructional programme. (Based on informal discussions with students at AIS and RLO, students' knowledge and the instruction leave a lot to be desired.)

Once a desired level of understanding of the programme and the areas of interaction has been reached, students would not only benefit more from the programme itself, but could also be used to assess the use of the areas of interaction in the classroom by the teachers.

6.3.4 The effectiveness of the programme in general

Finally, it might also be interesting to find out more about the effectiveness of the use of the areas of interaction in general. This is, however, directly related to the quality of the teaching and the students' knowledge. If the quality of the programme is under discussion, is it possible to find out how effective it is? A school will have to have implemented the programme to its perfection to really make any value judgments about the programme itself and compare it to other forms of education. One way of finding this out would be to have students from various programmes (regular, bilingual, international) do a specially designed test. Comparing the results between the various students might give an insight into their level of knowledge and understanding in general.

6.3.5 Conclusion

Much of the practical application of the areas of interaction is yet unknown. Unfortunately this research has not been able to shed much light on it. It has,

however, led to insights which can be used for future research. Already this research has led to a possible spin-off research at AIS. AIS is looking into a follow up research giving a more in-depth understanding into how the areas of interaction are used by teachers while teaching.

6.4 Practical suggestions

6.4.1 MYP coordinator

Because RLO has such a long history (since the late eighties) with the MYP and AIS, in comparison, just getting started (authorized since 2005), it can be useful for the two MYP coordinators to get in touch and discuss what they can learn from each other.

Furthermore the schools must keep supporting MYP teachers where they can in getting to grips with the MYP principles.

Also it should become normal that the MYP coordinators walk into classrooms whenever they feel the need to see how the teacher is teaching the areas of interaction and how the students react to them. This way the coordinator can, more directly, aid teachers where needed.

Give MYP teachers more time to get used to working with the new unit planners.

6.4.2 For researchers

Make sure that when a similar study is done in future, all students involved understand that filling in a questionnaire at the end of each lesson is still part of the lesson and thus has to be taken seriously. This will prevent students from rushing through the questions and filling in silly answers.

When researching how the areas of interaction are implemented in a school, try to avoid conducting the research at a time when a school is about to be evaluated by the IBO.

Researchers should do a pilot study. This will make clear what problems they might face, like; how do the students and teachers react to the presence of the researcher in class, or do the students fill in the forms seriously?

A large enough group of teachers and students should be researched otherwise little can be said about the data because the numbers of observations are too few. This would result in data that has hardly any validity at all.

The research should be planned well. Sufficient time should be allocated to conduct the research. This specifically applies to student educators who have to juggle two roles; teacher and researcher. This makes it difficult to choose freely whose lessons can be observed..

Students should be notified, more clearly than was done this time by their teachers, that they should answer the questions, given to them after each lesson, seriously. Also

at the beginning of the research a deal must be made with all participating teachers that the last ten minutes of their lesson will be reserved for the research.

References

- Beane, J.A., (1995). *Toward a Coherent Curriculum (1995 ASCD Yearbook)*. Alexandria, VA: Association For Supervision & Curriculum Development.
- Cassie, J. B., Drake, S. M., & Miller, J. P. (1990). *Holistic Learning: A Teacher's Guide to Integrated Studies (Curriculum Series, No 59)*. Toronto: University of Toronto Press.
- IBO, (2008). *MYP: From principles into practice*. Cardiff: International Baccalaureate Organization.
- IBO, (2003). *Middle Years Programme Guide to school application*. Geneva, Switzerland: International Baccalaureate Organization.
- IBO, (2002). *Middle Years Programme Areas of Interaction, August 2002*. Geneva, Switzerland: International Baccalaureate Organization 2002.
- Killen, R. (2007). *Effective teaching strategies. Lessons from research and practice*. South Melbourne, Vic: Thomson Social Science Press.
- (2007). *The origins, philosophy and fundamental principles of the IB Diploma and MYP*. Latin America: International Baccalaureate Organization.

Internet

- Marshman, R. (n.d.). *Values, Constructivism and the IB curriculum*. Retrieved June 22, 2009, <<http://www.ibo.org/ibaem/conferences/documents/ValuespaperRMarshman.pdf>>
- "Constructivism." Funderstanding: Education and Training for Active Learners. Retrieved 20 July 2009, <<http://www.funderstanding.com/content/constructivism>>.
- Observer Effect. (n.d.). Retrieved July 16, 2009, from www.aqr.org.uk/glossary/?term=observereffect