

Olympiads as a means to promote gifted students¹

Claudia Resch

Executive manager of ÖZBF

Interviews with students and course instructors

On behalf of the Austrian Federal Ministry of Education, Arts and Culture, the Austrian Research and Support Centre for the Gifted and Talented conducted a qualitative survey by interviewing students and course instructors of the four Olympiads in mathematics, physics, chemistry and philosophy to collect information on the following aspects:

- In what way have the students benefitted from the participation in the Olympiads and the respective preparatory courses?
- Were there any negative experiences?
- Did the participation in the prep course or the contest, respectively, have any impact on the regular class as well as on the students' subsequent choice of study?
- How did students and course instructors assess the level of the contests and the prep courses?
- Were there any methodological and didactic differences between regular class and prep course and, if yes, how were they perceived?
- Were methods of talent promotion such as differentiation and individualisation used in the prep courses?
- What kind of suggestions for improvement did the students and the course instructors have?

¹ This article is a combination of the following two articles: Resch, C. (2013). Schüler/innenolympiaden als Maßnahme der Begabungs- und Exzellenzförderung. Zusammenfassung von Schüler/inneninterviews. *news&science. Begabtenförderung und Begabungsforschung*, 33, 34-35, and Resch, C. (2013). Schüler/innenolympiaden als Maßnahme der Begabungs- und Exzellenzförderung. Zusammenfassung von Kursleiter/inneninterviews. *news&science. Begabtenförderung und Begabungsforschung*, 35, 21-24.

I would like to thank my colleague Andrea Hofer for helping with the translation of these articles into English.

The Austrian Research and Support Center for the Gifted and Talented received the names of the interviewees from the federal coordinators of the above-mentioned subject areas. Among the respondents were relatively young as well as experienced students and course instructors. Altogether fourteen students and ten course instructors were being interviewed between March and June 2011.

Summary of student interviews

Have you benefitted from participating in the Olympiad? If yes, in what way?

The students unanimously stated that they have benefitted considerably from participating in the Olympiads. For example through

- the additional input,
- the inspiring lectures, in particular those which were being held at the prep course for the national competition,
- the exchange of knowledge with better students,
- the opportunity to socialize and make friends,
- the opportunity to travel to foreign countries (due to the participation in the international contest),
- a gain in competences, e.g. an increased power of concentration (the students had to learn to concentrate for five hours, which they perceived as a good preparation for their school leaving examination) and the skill for solving problems in a systematic way,
- a gain in self-confidence.

Some students stated that the regular class became easier, as some topics had already been discussed in the prep course (in particular, in the prep courses for the national competition and the international competition).

Were there any negative experiences in connection with the participation?

All interviewed students denied this question. However, some students stated that there was some “unpleasant” time pressure, as the national competitions were usually carried out at the same time as their school leaving examinations (or tests within the experimental lessons, respectively).

Did the participation in the Olympiad encourage you to further excel in the subject in which the Olympiad took place? Why? Why not?

The students offered varying answers to this question: Some students had already had a great interest in the subject and thus they had decided to participate in the Olympiad in the first place. Others, yet again, intensified their interest in the subject only by participating in the Olympiad.

Some students said that the regular class appeared to them more boring through the participation in the Olympiad.

Did the participation in the Olympiad influence your choice of academic studies?

It is certainly worth noting that all interviewed students affirmed that they wanted to study the same subject at university, i.e., if they had participated in the Chemistry Olympiad, they wanted to study chemistry etc. Almost exclusively they had formed this wish through the participation in the Olympiad because they had noticed that the subject area was very interesting, on the other hand they were actually quite good at it.

How would you assess the difficulty level of the prep course?

The students' responses to this question were very heterogeneous:

- Half of the students said that the course had had a relatively high level, i.e. they felt the requirements could just be met by them.
- Four further students maintained that the level could be placed in the mid-range. For them, the course could have been slightly more difficult.
- Two students stated that the prep course in school had been far too easy for them. Only the prep course for the national competition had had an appropriate difficulty level.

Were there elements in the preparatory course which you missed in regular class? Were there elements of the regular class which you missed in the preparatory course?

The students unanimously negated both questions because they hardly saw any connection between the prep course and the regular class. The respondents simply could not imagine a regular class operating with prep course methods.

Some believed that a methodology change in the regular class was unfeasible, as it would fail due to the lack of interest of most students (while in the prep course all students shared a similarly high interest in the subject area).

According to the students the range of methods in the prep course was more diverse than in the regular class and encouraged the students to work more independently while the regular class was strongly characterized by the teacher's lecture.

How did the course instructors deal with varying levels of giftedness and excellence in the preparatory course?

The students' responses were quite varied: Some teachers would design an individual lesson plan for each student, while in other courses all students would do the same. In general, however, the teachers differentiated, e.g. by giving some students different tasks for the same subject area.

Do you have any suggestions for improvement, e.g. concerning organisation, preparatory course or competition?

Most students were very satisfied with the Olympiad and expressed this accordingly. However some stated the following points of criticism:

- The dissemination of information did not work very well at school because only one teacher at school (re)presented the Olympiad.
- One student suggested carrying out the national competition earlier, so one could better prepare for the international Olympiad (in some countries the qualification already takes place in February).
- After the national competition the students did not have the chance to look into their solution notes. If they, for instance, had not received the points which they believed they should have got, they could not complain.
- The participants of the Physics Olympiad would prefer a better scheduling between the Physics Olympiad and the Austrian Young Physicists' Tournament (AYPT), as scheduling conflicts often arose.
- In many countries there were many young lecturers, whereas in Austria many teachers at the national competition were at least 45 years of age or older.
- Some students criticised the shortening of prep course lessons.

Summary of course instructor interviews

What are the most positive experiences in connection with the Olympiad and the preparatory courses?

The course instructors found the following aspects to be most positive:

- The students' great delight in the subject matter.
- The opportunity to work independently and to address the students' personal interests.
- The friendly interaction with the students.
- Trying out new learning methods.
- The opportunity to deal with individual topics thoroughly.
- Small groups
- No pressure to give grades.
- Realising that the participation in the Olympiad led to the students' actually studying this subject at university and that they also succeeded there due to the Olympiad.
- The professional and social contact with other course instructors
- Receiving budget for teaching material

Are there any negative experiences?

Overall, the teachers were very satisfied with the Olympiad and the prep courses. Some course instructors, however, mentioned the following negative experiences:

- Many colleagues are not aware of the Olympiad.
- Some teachers complained about the time-intensive preparation that came along with student heterogeneity (up to four different difficulty levels). They would prefer having more prep course lessons so that they could split the groups.

Why did you start teaching preparatory courses?

Most course instructors were actually asked – either by school management, country coordinator, predecessor or students, if they would not like to take over a prep course so that the course would continue at that particular school. Only one teacher answered that he himself had requested to teach a course because he wanted to work with students who were interested in philosophical issues. All of the interviewed teachers stated that they were glad that they took the opportunity and that they very much appreciated working with „interested, motivated and talented“ students.

How are the students being informed about the courses in your school?

According to the instructors, the students are being informed as follows:

Either the course instructor...

... personally goes from class to class or

... she/he recruits gifted students from her/his own class or

... she/he specifically asks colleagues who then recommend students.

How do you deal with student heterogeneity in the preparatory courses? How are gifted students promoted in the course?

Almost all instructors stated that the differences between the students were sometimes quite considerable and this led to a lot of preparatory work on her or his part. The course instructors mentioned the following possibilities how to deal with student heterogeneity:

- One course instructor prepared three difficulty levels for a topic and recommended one of them to each student. However, the choice was left to the students. Other course instructors responded to student heterogeneity by providing beginners with more information and advanced ones with less.
- According to the instructors, the students' tackling the tasks independently leads to meaningful differentiation in general. Also open tasks are a very good means to promote gifted students. They are simply „calculating further than the others“. In the philosophy olympiad the essay questions which are relatively open promote students individually.
- One course instructor provides students with more tasks which they can do at home. However, students rarely take up this offer.
- One course instructor talked about a highly gifted student who attended grade 8 but still participated in the prep course of the senior classes. In order to enable him to participate she separately taught him the necessary subject matter which he had not had in regular class by then.
- Some course instructors divide the prep course into two groups, i.e. one week they teach the beginners and the following week they teach the advanced students.
- One school offers two weekly prep courses which are being planned and conducted by three teachers and attended by *all* students. Through the team teaching the teachers are able to deal with different groups individually.
- One instructor stated that the student heterogeneity led to students sometimes either joining the course later in the school year or even skipping a whole year.

In what way do you consider the student Olympiad to be a means to teach gifted students for you?

The instructors answered as follows:

- Taking part in the Olympiad provides students with the opportunity to deal with topics which they would not learn about in regular class. Also tasks are usually more difficult, which is a good challenge for them. Students usually have more time to work independently, to deal with real-life problems and to work together with other gifted students.
- Olympiads are a method of enrichment.
- The students attend the course voluntarily and that is why working with them is so different and rewarding.

Do you use a different methodological or didactic approach in the preparatory course in comparison to regular class? If yes, which?

Almost all instructors use a different methodological and didactic approach in their prep courses. In the courses students predominantly work independently by tackling open tasks and questions (which they often check themselves with the help of solution sheets). In the prep course for the Chemistry Olympiad students also experiment a lot more than in regular class. In general, frontal teacher presentation happens considerably less in prep courses.

The teachers mentioned that they appreciated not having to stick to the prescribed curriculum and that they could therefore cater to students' wishes.

Most teachers doubted whether those so-called "more open" methods, which they used in prep courses, were suitable for regular class. They believed that lower-achieving students would not be able to work out some topics on their own. They also stated that preparing for a prep course needed a lot more time than preparing for regular class – time which they did not always have.

Do you have any suggestions for improvement, e.g. concerning organisation, preparatory course, contest ?

Most instructors are quite happy with the organisation of the Olympiad and consider the contest as the school year's highlight. Nevertheless, the following suggestions were being made:

- **More courses:** Many interviewees wished for more courses, which would enable smaller and slightly more homogeneous groups. They also criticized that each school only received a certain amount of course lessons, which were then divided between *all* the teachers. This, however, would sometimes cause friction with those who wanted to offer courses in sports, music, reading promotion etc.
- **Awareness level:** Instructors generally criticized that the Olympiad was hardly known among their colleagues, let alone students. They would therefore wish for more publicity. They suggested honouring students who were successful at the International Olympiad by officials or politicians in order to make the Olympiad more established. This would also acknowledge the students' efforts.
- **Time issues:** Problems for older students arose because the national contest and the school-leaving exams sometimes overlapped.
- **Physics:** A physics course instructor criticized the bureaucratic way of organising material for the prep course because this was being handled by a federal authority. Furthermore, he criticized that there was some competition (especially when it came to time schedules) with similar courses such as e.g. the Austrian Young Physicists' Tournament (AYPT). In his opinion, it would be better to teach all students interested in Physics together in *one* course. After some time, they could then decide which course or contest, respectively, better fitted their competence and interest.
- **Getting credits for academic studies:** The instructors would appreciate it if students who successfully participated at the Olympiad received university credits.

Conclusion

The comparison between the student and the course instructor interviews leads to the following interesting findings:

Both groups agreed that the teachers used a different methodological and didactic approach in the prep course compared to the regular class. They also agreed on the reasons for this decision. Both groups believed that a didactic approach that encou-

raged students to work out topics independently would overstrain weaker or less interested students. Lower-achieving students would either not be able to work independently or they would not be willing to do so.

Teachers furthermore mentioned that such an approach was more time-consuming – time which they did not always have.

However, what is striking is that both students and course instructors actually perceived the didactic approach in the prep courses as more meaningful and effective. Accordingly, it remains to be resolved which preconditions have to be met that this way of teaching (e.g. performance differentiation by open tasks or curriculum compacting) will actually become established in the everyday classroom.

Author:

Dr. Claudia Resch

Executive Manager of the Austrian Research and Support Center for the Gifted and Talented

Promoting talent. Shaping the future
The Austrian Research and Support Center for the Gifted and Talented (ÖZBF)



The Austrian Research and Support Centre for the Gifted and Talented is the federal institution for the development of gifted education in Austria and supports persons, institutions and initiatives that promote gifts and talents. It was founded in 1999 and is being financed by the Ministries of Education, Arts and Culture as well as Science and Research.

The ÖZBF stands for a holistic and systematic approach to gifted education which encompasses all fields of action involved in promoting gifts and talents: kindergartens, schools, universities but also communities, economy and working world.

We are working on: strategies and concepts, school development, teacher education, curricula, research, pilot projects, networks and cooperations, conferences, providing information and raising awareness.