



# Intellectual Capital Statement

# **BIG\_STEM+ 2020**

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To make our knowledge  
growth visible

**Editor:**  
**Office of the Lower Austrian Government,**  
**Department of Kindergartens**



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# 1. Foreword

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In 2016, three EU projects called “Educational Cooperation in Border Regions” (BIG AT-CZ, BIG AT-HU, and BIG SK-AT) were launched as part of the INTERREG V-A programs. Together with our project partners from the federal states of Vienna, Burgenland, and Upper Austria and from the participating neighboring countries Hungary, Slovakia, and the Czech Republic, we pursued the goal of promoting linguistic, intercultural, and social skills. The projects were very well received regionally and internationally and ended in 2019.

In our common living space Europe, the above-mentioned skills and natural scientific, technical, and digital skills are becoming increasingly important. Therefore, the EU projects were continued in 2019. A total of 15 project partners, active across borders in 12 project regions, joined forces again to implement the three new Interreg projects EduSTEM (AT-CZ), BIG\_inn AT-HU and BIG\_ling SK-AT together by the end of 2022. The aim of the projects is to strengthen the competitiveness and employability of future young

adults in the cross-border and regional economic area by means of an initial introduction to the language and culture of neighboring countries, starting from kindergarten, and continuing during school. Here, the language teaching and promotion of multilingualism are expanded to include the promotion of so-called MINT competencies, considering language-sensitive technical education, career orientation, and bilingualism.

With its role as lead partner of all three projects, Lower Austria is making a significant contribution to a better understanding of the regions in the heart of Europe. Special thanks go to all project and cooperation partners within Austria as well as in the neighboring countries Czech Republic, Slovakia, and Hungary. We would also like to take this opportunity to express our sincere thanks for the dedicated efforts of all our employees in the various project regions! The cross-border partnerships of countries and regions are a successful example of peaceful coexistence in a strong and common Europe!



A handwritten signature in black ink, appearing to read 'Ch. Teschl-Hofmeister'. The signature is fluid and cursive.

Christiane Teschl-Hofmeister  
Provincial Councillor for Education

## 2. Management Summary

All drivers of Intellectual Capital showed an **improvement** in the period between 2016 and 2020. With two exceptions, this positive development is likely to continue in the coming years. The reason for this lies in the numerous systematic development measures from the work packages of the sub-projects as well as in the network structures that have been created. All the 40 experts involved in this Intellectual Capital statement also recognize an improvement in the system itself: the knowledge base and the influencing factors from the Intellectual Capital are increasingly better planned, development activities are implemented, and the objectives are being jointly achieved. There was an **improvement** for all the drivers assessed, in the period between 2016 and 2020. With two exceptions, this positive development is likely to continue in the coming years. The reason for this lies in the numerous systematic development **measures** from the work packages of the sub-projects as well as in the resulting network structures. The 40 experts involved in this Intellectual Capital statement also see an improvement in the system itself: the knowledge base and the drivers from Intellectual Capital are planned better and better, development activities are also implemented, and the achievement of goals is jointly reflected. All in all, this leads to a **sustainable, positive contribution** to the achievement of the overall Interreg goals, especially in the context of “networking and cooperation”, “educational mobility and regional identity” as well as for “long-term sustainable economic growth”. To secure this favorable development in the long term, however, **numerous other measures** are recommended. The most urgent is the **long-term securing of further financing and optimization of the framework conditions** of the successful activities. All participants agree that the work has so far been perceived positively in all four countries. They argue that in order to ensure their permanence as well as for further growth and long-term effectiveness, the **continuity of these projects and their networks** should be ensured. Otherwise, there is a very high probability that the results created so far as well as the network itself will disintegrate. The most **urgent fields of action** for further work in BIG\_STEM+ are the continuous **improvement of relationships with the target group**, with funding agencies as well as

with other (Interreg) projects and actors. In addition, we recommend the further development of the knowledge base and professional competence, innovation, and learning in a network as well as leadership and project management skills. In detail, the **participants submitted more than 300 ideas for measures**, which were summarized in **74 proposals**. Secure financing for implementation by existing and further potential project partners supports the networking as well as the achievement of their overall goals in the coming years in a very effective way.

### Pavel und Alexander (EduSTEM, LAustria)

Alexander is 5 years old and has been attending kindergarten in Pulkau for almost 2 1/2 years.

The weekly visit of the native speaker Lucie gives Alexander the opportunity to learn the Czech language in a playful way.



Figure 1: © Margit Wurst

At his home, the façade is being rebuilt and among the workers is Pavel from Znojmo (Czech Republic), who works for an Austrian company. It was not long before Alexander realized that he could talk to Pavel in his first language and also sing him songs in Czech.

Now they count building blocks or cement bags in Czech every day. Pavel is enthusiastic about Alexander and Alexander has a new friend. Pavel's daughter will attend the partner kindergarten of Pulkau in Znaim starting this autumn.

# 3. BIG\_STEM+ as a Project Network

## 3.1 Abstract of BIG\_STEM+ Project

At the beginning (2004) the focus was on language teaching. The BIG projects started in 2016. Since 2019, the existing offers have been expanded with offers for inquiry-based and exploratory learning and learning with integrated physical activity with a focus on the digital, scientific, and technical fields. This means that the language teaching will be expanded to include the skills of STEM<sup>1</sup>. The “+” results from the planned extension of the project until 2024.

Since 2016, the Kindergarten Department has been the project organizer and lead partner of three EU projects in the funding programs INTERREG V-A Austria-Czech Republic, INTERREG V-A Slovakia-Austria and INTERREG V-A Austria-Hungary, all with the same title. “Educational Cooperation in the Border Region” (BIG AT-CZ, BIG SK-AT, BIG AT-HU). The three EU projects are independent but closely connected with synergy effects, which were implemented in cooperation with 15 project partners from 4 federal states (Lower Austria, Upper Austria, Vienna, and Burgenland) in Austria and 3 neighboring countries (Czech Republic, Slovakia, and Hungary).

### Projects of educational cooperation

in the border region (= BIG) over time

- » 2016–2019: BIG AT-CZ, BIG AT-HU
- » 2017–2020: BIG SK-AT
- » 2019–2022: BIG\_inn AT-HU and EduSTEM AT-CZ
- » 2020–2022: BIG\_ling SK-AT

This cooperation has continued since November 2019 within the framework of the projects Educational Cooperation in the Border Region AT-HU\_innovative (BIG\_inn AT-HU, INTERREG V-A AT-HU) and Education in Science, Technology, Engineering and

Mathematics (EduSTEM, INTERREG V-A AT-CZ) and since November 2020 within the framework of the Project Educational Cooperation in the Border Region SK-AT\_bilingual (BIG\_ling SK-AT, Interreg V-A SK-AT).

The “system” consists of the project partner organizations of these six projects, which are in Lower Austria, Vienna, Burgenland, the Czech Republic, Slovakia, and Hungary. These are formally independent projects, each with a project consortium.

## 3.2 Target description of BIG\_STEM+

In the projects of the BIG\_STEM+ network, the supporting organizations in Austria (Lower Austria, Upper Austria, Vienna, and Burgenland), the Czech Republic, Slovakia, and Hungary would like to build on their results, experiences and networks to date and further develop them. The projects form a superordinate network and contribute to increasing the quality of competence-oriented educational work in selected pilot projects in the whole project region.

The aim of BIG\_STEM+ is to make visible the valuable Intellectual Capital that has arisen through already implemented and existing EU projects. **Cross-border networking and cooperation**, should contribute to strengthening (educational) **mobility as well as the regional identity** of young, multilingual people, breaking down barriers (between the regions) and thus supporting long-term **economic growth and sustainable development** overall. The attempt to visualize the structure of the BIG\_STEM+ projects as a network, which has grown since 2004, shows very different images. Actors can be sorted by roles or hierarchy, geography or content, the relationships are always different and dynamic over time – and thus complex. Exactly, for this reason, joint goal-

<sup>1</sup>STEM: science, technology, engineering, mathematics

setting processes (leadership), common network structures, and often flexible compromises during the implementation in nationally differently regulated regions are necessary for sustainable success.

All the Interreg projects develop in the context of an environment that reinforces success. This also affects the legal situation of educational institutions, some of which differ significantly in the regions and thus influence cooperation.

BIG\_STEM+ consists of several individual projects which together pursue long-term goals (see Chapter 5). The individual projects achieve their own project goals through central activities (= work packages) and thus support the overall goal. For this they use (similar) resources (= Intellectual Capital), which are differentiated into human capital, structural capital, and relational capital. This Intellectual Capital statement describes the development and status of the projects and shows priority fields of action for further development.

	BIG_inn AT-HU	EduSTEM AT-CZ	BIG_ling SK-AT
<b>Lead Partner:</b>	Office of the Lower Austrian Provincial Government, Department of Kindergarten		
<b>Project partners:</b>	<p><b>AT:</b></p> <ul style="list-style-type: none"> <li>» Directorate of Education for Vienna, Europe Office</li> <li>» Austrian Friends of Children- Vienna State Organization,</li> <li>» Burgenland State</li> </ul> <p><b>HU:</b></p> <ul style="list-style-type: none"> <li>» West Pannonian Nonprofit Ltd. for Spatial and Economic Development</li> <li>» University Sopron, Benedek Elek Faculty of Education</li> </ul>	<p><b>AT:</b></p> <ul style="list-style-type: none"> <li>» Directorate of Education for Vienna, Europe Office</li> <li>» Austrian Friends of Children- Vienna State Organization</li> </ul> <p><b>CZ:</b></p> <ul style="list-style-type: none"> <li>» Institution for Further Training of Teachers and Center for Services to Schools Č. Budějovice</li> <li>» Vysočina Education</li> <li>» Institution for Further Training of Teachers and Center for Services to Schools Brno</li> <li>» Leisure Center Lužánky</li> <li>» South Marche Center for International Mobility, z.s.p.o.</li> </ul>	<p><b>AT:</b></p> <ul style="list-style-type: none"> <li>» Directorate of Education for Vienna, Europe Office</li> <li>» Austrian Friends of Children- Vienna State Organization</li> <li>» Burgenland State</li> </ul> <p><b>SK:</b></p> <ul style="list-style-type: none"> <li>» City of Senica</li> <li>» Association of Parents of the German-Slovakian School of Encounter Bratislava</li> <li>» Daphne – Institute of Applied Ecology</li> <li>» Bratislava District Nove Mesto</li> </ul>

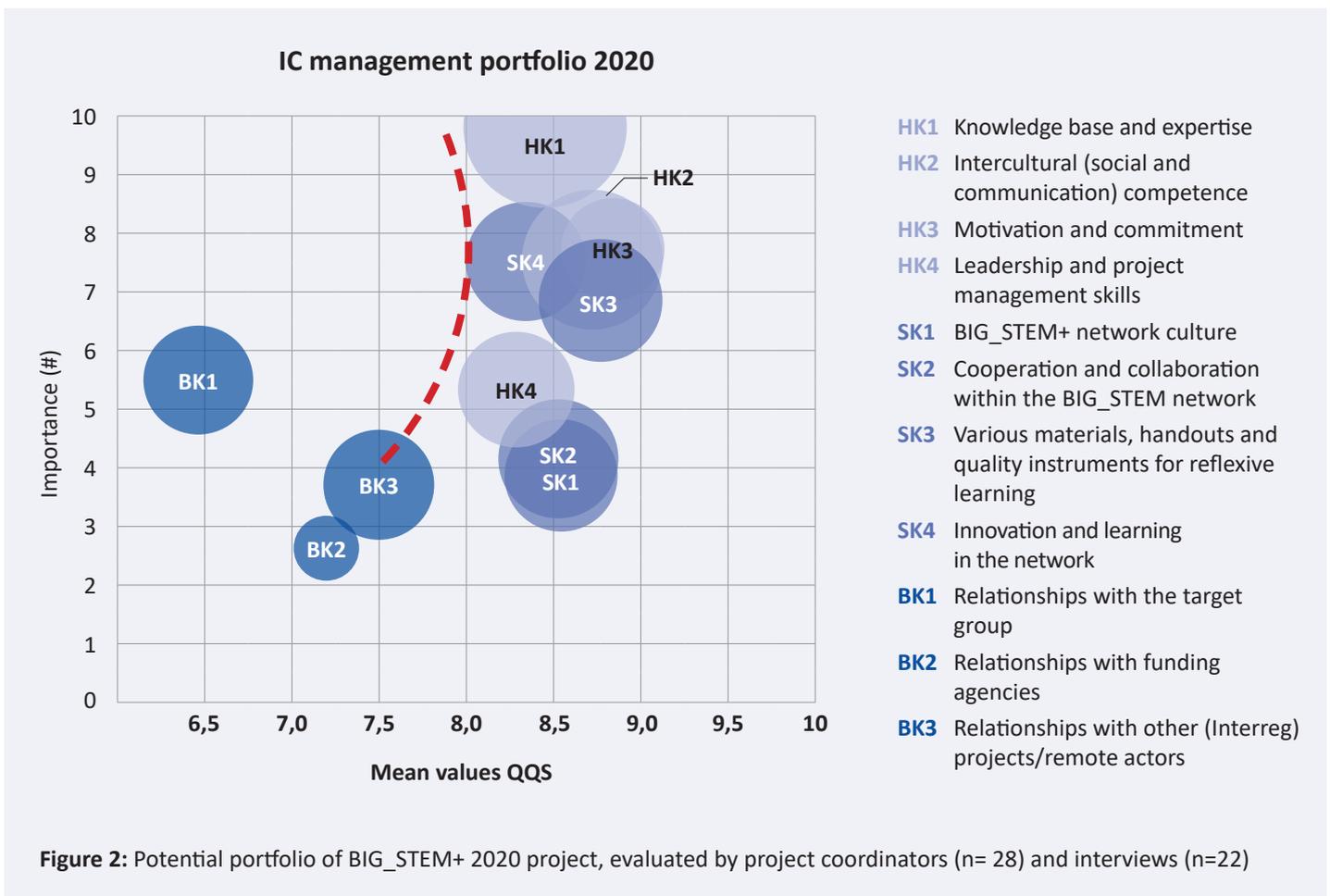
**Table 1:** Project partners BIG\_STEM+

# 4. Situation and Development in Intellectual Capital

## 4.1 This is what BIG\_STEM+ has achieved so far – strengths and weaknesses briefly

In Fig. 2, all drivers of IC with the respective valuations are integrated in an IC-management portfolio. The mean evaluation of the current quality and the quantity as well as the systematic management are on the x-axis. The relative importance of each driver to accomplish the strategic objectives is on the y-axis.

The size of the bubbles highlight (again) how systematically the driver is already being maintained and developed. The axes of the image are adjusted to the extreme values of the rating, to highlight their relative strengths and weaknesses.



**Strengths in the BIG\_STEM+ education network** are intercultural competence and motivation as well as the Various materials, handouts and quality instruments for reflective learning jointly developed in recent years in the projects' work packages. These factors will most likely continue to improve in the further project periods (represented by the size of the circles). These factors are also very important for achieving goals.

The cooperation and collaboration in the BIG\_STEM+ network as well as the network culture closely related to it are practically equally good, but currently (due to the already successful development work) somewhat less urgent.

#### **Strengths**

Intercultural competence  
Motivation  
Various materials, handouts, and quality instruments for reflective learning

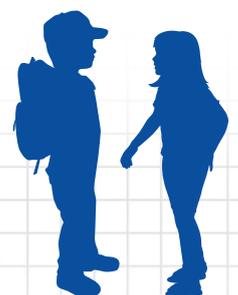
By far the most urgent **field of action** for further work in BIG\_STEM+ is the continuous improvement of relationships with target groups (BK1), which are differentiated into numerous subgroups. Relations with external learning locations such as businesses, and natural and cultural institutions are rated the weakest (overall satisfactory); but also, relations with municipalities, cities, and regions are weak. Although significant progress was made between 2016 and 2020, the average values of the evaluation are only around 50%. Overall, there are too few contacts with most other target groups due to a lack of employees, the average evaluation of the existing relationships is good (about 60%).

#### **Fields of action**

Relationships with target groups  
Relationships with funding agencies  
Knowledge base and expertise  
Innovation and learning in the network  
Leadership and project management skills

Work will also be carried out on relations with funding agencies (BK2), as well as with other (Interreg) projects and actors (BK3), with different priorities. In the first case, the primary aim is to improve administrative processes (to improve liquidity through shorter advance financing, but also to reduce the control effort, which is perceived as bureaucratic, for more flexibility). To explain this situation, it can only be designed in the very long term and thus plays a special role in elementary and primary education. In the second case, it is about the better use of opportunities to network with other groups, but currently cannot be realized due to a lack of resources. Overall, the respondents do not predict any improvement for the next few years without a very significant change in the focus which requires additional resources.

In addition, the further continuous development of the knowledge base and expertise, innovation and learning in the network as well as leadership and project management skills are recommended to optimally achieve the BIG\_STEM+ goals.



### 4.1.1 Significant improvements in all drivers

The successes of the work in progress can be seen in a comparison to the IC-management portfolio – see Figure 3 – by a general shift to the right of the average assessment of all factors in Intellectual Capital.

The following chapters describe detailed evaluations, including a differentiation of the arguments according to the evaluation criteria for the available amount and quality, as well as the level of systematic development.

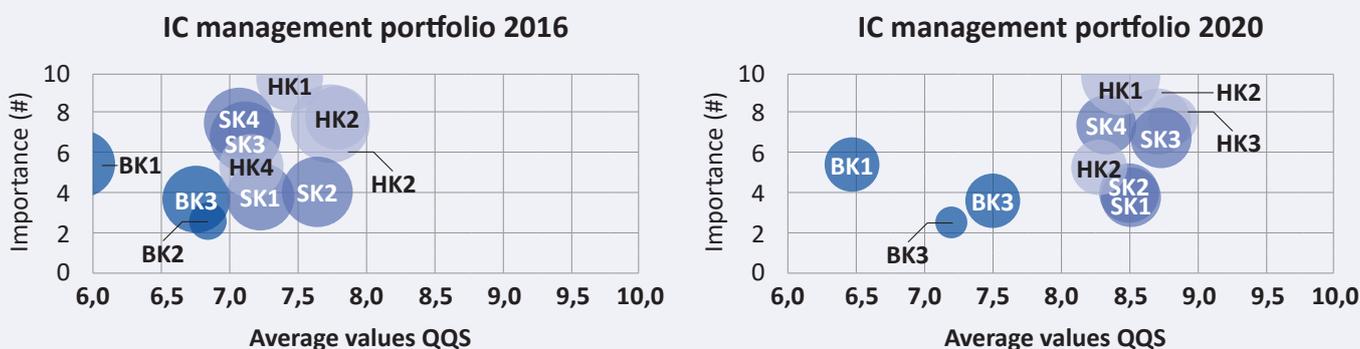


Figure 3: Comparison of IC management portfolios BIG\_STEM+ 2016 and 2020 (n= 50)



### New friendships through partnerships (BIG SK-AT)

In today's hectic world, humanity and strong friendships should have an important place in our lives. It is therefore extremely important that we support children in building positive relationships from an early age. Especially the time in kindergarten is ideal for this. After all, is there an easier way to build new friendships than at playtime? That is the reason for the very important decision of the kindergarten Legerského in Bratislava to invite its neighbours from the Lower Austrian, kindergarten in Lasee, to Bratislava in the framework of BIG SK-AT project. Our invitation was accepted and the meeting took place on 10th October 2019. The visit was the most important event of the week for both the children and the educators. The children were able to spend an active time together and get

to know each other better. They were able to explore the kindergarten building, then have a snack and participate in several exciting games and activities of their own choice. However, all activities had one thing in common: they focused on traffic education, which is the main focus of our kindergarten. Finally, the children were able to try out the traffic rules on our beautiful traffic square together with the representatives of the Bratislava city police. As a souvenir, they were ceremoniously presented with certificates. We are happy that our kindergarten gave the children this opportunity thanks to the project and hope that their friendships will continue to be cultivated, also thanks to the neighbour language teaching in both kindergartens.

## 4.2 This is how BIG\_STEM+ should continue – ideas for measures and recommendations

The topic of further development of Intellectual Capital was worked on intensively by two of the three workshops on the evaluation of Intellectual Capital involving 24 project coordinators as well as interviews with 26 other stakeholders of the BIG\_STEM+ network. Numerous medium- and long-term effective proposals were also developed in addition to direct effects resulting from the given situation such as work with digital instruments as a group and the direct dialog made possible despite Covid19-related mobility restrictions. A selection for the six fields of action is presented here, the further proposals can be found in the long version (appendix)..

### 4.2.1 Improving relationships with target groups

In addition to **awareness-raising measures** among the target groups, long-term success requires the **continuation, roll-out and provision of sufficient human and financial resources** so that the new project approach can be disseminated further. This would also allow more time for relationship management and communication with the target groups:

- » A stronger differentiation of the target groups and individual offers for interaction, among others through open questions and integration into the project work, should also have a very positive effect on the general motivation.
- » The structure of communication with target groups could benefit from activating the multipliers even more strongly and thus better than before also to integrate development proposals bottom-up into the network.
- » Better clarification of mutual expectations of all stakeholders at the beginning of projects should contribute to the higher effectiveness of the work packages.



### Cross-border training for pedagogical professionals (BIG AT-HU)

#### History of the introduction of the Hungarian language in a school

For me, it was always important to “think outside the box” throughout my service as a teacher/director. So, it was a coincidence that I was allowed to participate in a cross-border seminar in Hungary as part of the Interreg project BIG AT-HU. Not only did I get to know the school system in the neighboring country, but I also learned about the possibilities of teaching Hungarian at my school. In the meantime, around 30 children learn Hungarian for three hours a week, and to establish contact with children in the neighboring country, a school partnership with a Sopron school has also been established.

This development was a real enrichment for us, and the children always look forward to the cross-border meetings.

The **mayors of the municipalities**, as well as parents, should be invited and continuously provided with information as well as involved in cooperation. The project activities should be better documented on the homepages of the institutions (increased public relations work) creating a higher level of identification and marketing effectiveness for the project.

The **exchange of information with educational institutions** and network members also from other school districts must be massively improved:

- » Regular newsletters, joint (cross-district) events (also as a template for the social media channels of third parties).
- » Spreading the knowledge platform of the BIG project more widely.

Better framework conditions should be created so that the individual target groups can actually participate in the activities offered (working meetings, language courses, excursions, etc.). It would be helpful to simplify the employment law permit procedure for participation in project events.

#### 4.2.2 Improving the knowledge base and expertise

- » In general, the project team needs **additional employees** for support. These could then further develop the projects evenly and comprehensively.
- » Newly hired colleagues should get to know the projects and in particular the **program manuals**. Training courses in project management (see HK4) also help with this.

#### Introduction of German language teaching (BIG AT-HU, HU)

In response to the demands of the parents, the playful language teaching of the German language in the kindergarten of Sopronkövesd was initiated in 2012. Thanks to the teacher, who taught German, the children were able to participate in several events of the project. In the following years, their language skills improved through the visits of the students from Sopron as part of the project, who also brought the project results to the KG. This service of the kindergarten allowed the number of children to be doubled in 8 years.



#### 4.2.3 Improving innovation and learning in the network

**Best Practices** should be adopted through intensive exchange with each other, Feedbacks and Transfers (shadowing). The network benefits from improved know-how in the computer skills and use of digital tools.

- » The project contents should be systematically linked to each other and be regionally justifiable. The innovations should be added as new topics.
- » **Greater flexibility** in dealing with local conditions from all sides would facilitate cooperation. This network would benefit from raising awareness of the promotion of neighboring languages among political leaders.
- » Intergovernmental or EU agreements for school visits beyond the border are still missing.
- » There is lack of a clear legislative support.
- » The **transparency of local framework conditions** and specifications needs to be improved.
- » For innovation and learning, experts should become familiar with the methods of research-based learning in STEM areas with the integration of the neighboring language and multilingualism, as well as involve the kindergarten teachers and the decision-makers and consider their real needs.

A common **digital project management platform**, provided by the Interreg program, could provide many functions for **document management**, scheduling, virtual communication, collaboration, etc., thus significantly simplifying the processes overall.

- » There would be a great advantage in further education training in the field of soft skills, such as moderation methods, the leadership of interdisciplinary groups as well as the use of digital tools in project management and moderation as well as the development of competencies for online communication and the use of digital technologies.



## The role of expert advice (Vienna)

Hannajune is 6 years old and moved from kindergarten to school in the fall of the year. There are many languages circulating in her head. Hannajune is fluent in Hungarian, English, and German. In addition, she can recognize some languages by sound, because all language boundaries were already opened in kindergarten by the project. The children were completely free to use the language(s) of their choice in everyday life when playing with their friends.

Such complex language biographies of a child, as well as the individual life-world multilingualism and associated phenomena in language development often raise questions for educators, both in kindergarten and at school.

*What should the term mother tongue provide information about? What do we mean by multilingualism? Are there several languages in the child's family? How can I embed multilingualism in pedagogical contexts? What about the value of languages? Are hierarchies recognizable?*

To take up all these important questions and to reflect on the pictures brought by the educators together with an expert, the format of expert advice about multilingualism implemented in the context of the project offers time and space.

documentation in finance and reporting, soft skills (e.g., moderation methods, and management of interdisciplinary groups), on the use of digital tools as well as on cross-organizational **project management**. This content is also ideally available as videos online.

- » It would be an added value if the management levels also received further training in the field of **management and leadership**.
- » The training and **dissemination of information** should be sustainable, written, and comprehensive. The **time** for this should be increased.
- » **Continuity** at the management level has a positive effect.
- » When developing the project proposal, the management should be involved. Good communication and networking are important.

A clear **division of tasks among project managers** has a positive effect on success.

### 4.2.5 Improvement of relations with other (Interreg) projects / remote actors

“Stakeholder work” as an activity seems necessary and especially important in terms of sustainability.

#### Suggestions for the Program Authority:

- » **Annual networking meetings** with coordinators/experts of all projects to exchange experiences.
- » Development of a **database that reflects all project contents** and from which an expert database is derived. This could result in interesting networks for the individual project coordinators. Experts from other projects could be invited to symposia, and lectures. This could also lead to interesting networking and exchange of experience.

### 4.2.4 Improve project management and leadership skills

- » At least one person with **skills** in the **language** of the neighboring country should be involved in the work of project partners.
- » At the start of the project, **workshops** helped to coordinate the planning with regional coordinators. Administrative content should be discussed and forwarded to the partners.
- » **Seminars** should be offered on the topics of do-

### At the project level:

- » The exchange with other educational projects **avoids duplication** and provides benefits to all from what has already been developed. It is important to 1) get an overview of what is happening in the project regions/municipalities, 2) know which activities are being implemented and 3) what the municipality is committed to. This will enable leaders to draw conclusions for their own projects and the associated planned activities and plans
- » Invite or involve coordinators/experts of other Interreg projects in cross-border events
- » Include coordinators/experts of other Interreg projects in **newsletter mailing lists**
- » Check and implement possible **social media** use (LinkedIn, Facebook, etc.)
- » Project coordinators should increasingly deal with the other projects and become informed regularly on the homepage and pass on innovations and interesting information to everyone involved in the project

The regular **exchange with the strategic partners** should be pushed and expanded.

### 4.2.6 Improving relationships with funding agencies

The common goal of all project partners is continuity. The stability of the framework conditions is in a delicate balance with innovation.

- » Each project partner should become aware of the importance of the **heterogeneous funding landscape** to build useful, transparent relationships with the respective funding bodies.
- » **Target group-oriented communication strategies should** be developed and implemented jointly vis-à-vis the funding bodies.
- » The communication/information of the lead partner with project partners and funding bodies should be strengthened in the **initial phase of the project**.
- » **Getting-to-know-each-other meetings** in the initial phase of the project support the cooperation between funding bodies and project partners.

- » Project coordinators should increasingly refer to **manuals** in the initial phase and discuss central content together with the project partners.
- » **Positive news** should be actively communicated to the funding agencies.
- » It would be helpful to **speed up the control** of accounting reports and reduce bureaucracy in project execution.



### 4.3 Summary of Intellectual Capital

**Human Capital** has benefitted from the project developments of recent years. Nevertheless, it also erodes due to employee turnover. Leadership and in particular project management competence contribute to **building a structure** as well as to the achievement of goals. In addition, **exchange formats** between the participants are also very helpful in learning from each other.

Cooperation with scientific institutions supports education and training and also provides innovative impulses through specific projects.

The **Structural Capital** has been developed over the years and is **continuously being adapted to new requirements**. An open network culture creates both the **formal framework and the basis of trust** for the good cooperation, joint learning, and appropriate documentation.

New processes and innovative materials directly support the productive achievement of goals and can be shared highly efficiently with other partners. **Small investments** in these factors support very long and effective levers, but they only unfold their benefits through effective dissemination and application to the target groups.

Even if very different stakeholders are addressed in **the Relationship Capital**, there is a high overall interest in **more transparency** both internally and externally.

The lead partners should share information with the network with newsletters, get-to-know meetings, exchange forums, and social media. The balance between active communication (in different languages) and additional offers with limited time for all partners is a challenge but can probably be achieved by even **more systematic use of digital structures**; (see Structural Capital).



### Wide audience thanks to social media (BIG SK-AT, SK)



The BIG SK-AT project has met with a great response in Slovakia. We, Daphne – Institute for Applied Ecology, as project partners, are pleased that we were able to address a broad audience thanks to social media.

We have summarized all activities, materials, and videos for the teachers in an article, which they can access at any time under: [www.daphne.sk/inspiracie](http://www.daphne.sk/inspiracie) to be inspired for their lessons. For other audiences, we have published twelve short videos on our Facebook with ideas for activities including materials in Slovak and German.

This way it becomes possible making our inspirations accessible not only to teachers and students but also to the public throughout Slovakia and beyond. Only during the project was running, were we able to address almost 750,000 users.



## Joint positive experiences in the project (BIG AT-CZ, CZ)

As part of the project “Educational Cooperation in the Border Region”, BIG ATCZ5, a joint meeting of Czech and Austrian children aged 12 to 15 took place from 14 to 17 May 2018 in a holiday camp. A total of 15 children from the Czech Republic and 6 children from Austria took part in the holiday camp accompanied by two Austrian teachers. The Czech children spent all four days here. The children from Austria arrived on 15 May. On this day, a full-day program focused on joint activities was prepared, including the campfire, which offered numerous opportunities for getting to know each other and working together. The camp took place in the cozy ambiance of the holiday resort of Želivka, which is in the middle of the forest near Humpolec.

The holiday camp was intended to convey to the children the history and the present of the two countries – the Czech Republic and Austria – in an exciting way appropriate to their age. A team of experienced lecturers took part in the organization of the holiday camp, which prepared a varied and interesting program for the children. The activities were interactive. The connecting element represented the theme of cooperation and the search for the common historical, culinary, and other elements from the everyday life of the two countries. The children talked in different languages and established informal

partnerships. This was especially the case with the team competition and the activities in the rope center.

Judging by the personal feedback of the participants, the holiday camp was very successful. Above all, the children appreciated the shared experiences at the holiday camp. The children said that time was too short. It would have been much better if their stay was longer so they would have more time for everything. Here we mention a review that expresses the opinion of most children: “It was great. The best thing about the camp, however, was the opportunity to meet new people – from another school, from another city, from another country. Then it was also the lecturers who prepared a great program and paid attention to us from morning to night.”

This evaluation expresses not only the intention of the holiday camp, but also of the entire project – encounters, getting to know each other, exchanging ideas, cooperation, and friendship.

# 5. Results from the BIG\_STEM+ projects

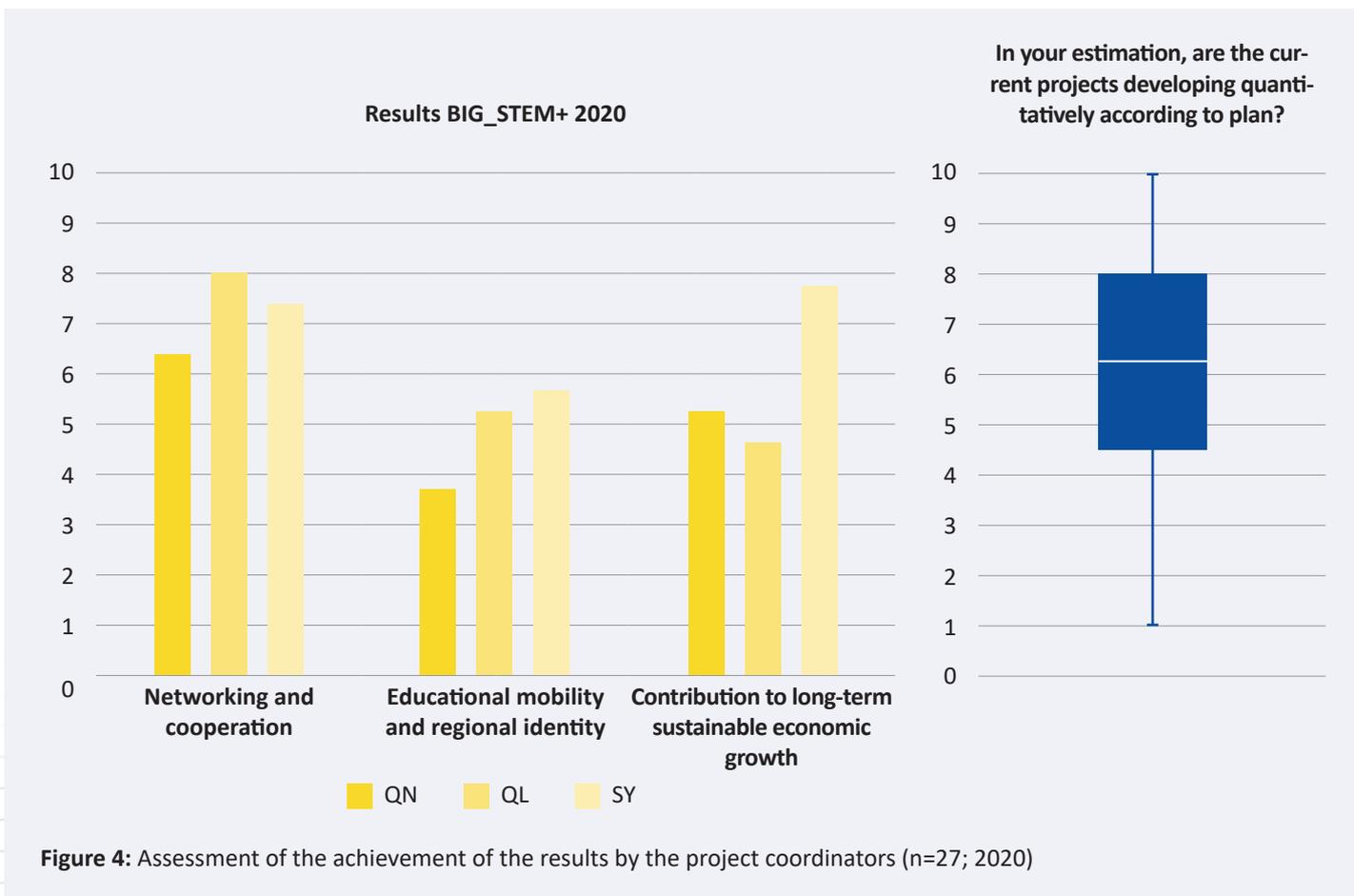
The aim of BIG\_STEM+ is to publicize the valuable Intellectual Capital that has been generated in past and existing EU projects. Through cross-border networking and cooperation, these should subsequently contribute to strengthening the mobility and regional identity of young multilingual people, breaking down barriers between the regions and thus supporting long-term economic growth and sustainable development overall.

From this broad objective, the following **sub-elements** are derived:

- » cross-border networking and cooperation
- » mobility and regional identity
- » economic growth and sustainable development

In October 2020, the members of the project consortium met in 3 working groups to evaluate the degree of target achievement and previous results to test the factors of Intellectual Capital as a whole with regard to relevance. The data were supplemented in June 2021 by the statements of the Slovak project partners. The comprehensive evaluation of the results themselves is not the focus of the Intellectual Capital statement.

Figure 4 shows the data as a common average of all participants. The overall statement is also supported by the box plot from the questionnaire with n=40. Quantity (QN) and quality (QL). It also evaluates the systematic management with which it is developed.



The BIG\_STEM+ projects contribute 80 % to the “**networking and cooperation**” between the partners and the regions. Above all, the Austrian project partners would like to see significantly more activity, while in Slovakia the system is rated particularly highly.

The assessment of “**mobility and regional identity**” varies greatly from region to region. While the Czech Republic and Hungary see the target achievement at around 60%, in Austria it is more like 20%. Slovakia shows a differentiated middle position with development potential like Austria. Reasons for this are assumed to be the rather one-sided orientation towards the economic attraction of the Vienna-Bratislava axis, and it was also influenced by the strong restrictions on mobility in 2020 and 2021.

Overall, the “**contribution to long-term sustainable economic growth**” is rated positively, above all due to the high value in the system (77%). However, the immediate impact resulting from the BIG\_STEM+ projects (alone) will not be sufficient to achieve its macro-objectives in the regions (figure 6), mainly because of the relatively small size of the projects (50%). Particularly Slovakia highly depends on EU funding.

Overall, there is a clear positive contribution to results from the BIG\_STEM+ projects, which are also developed very **systematically** (65%) in the individual projects, but this will require many years of continuous work to achieve the full impact potential. In particular, the high assessment of the system of long-term development (77%) can be seen as proof that the approach pursued by the BIG\_STEM+ projects is effective. However, these developments are hindered by the **lack of institutional developments** at the level of legal integration (intergovernmental and European framework agreements) as well as regularly **changing program guidelines** and the associated **challenges for financing the projects**.



## My language – your language – our language (BIG SK-AT, BGLD)



**Figure 5:**  
Photo Petra Schmidt –  
© Education Directorate  
for Burgenland

### Installation of a language corner in a school

The idea of the “language corner” was born from my school’s participation in a project and my part-time study of psychomotor skills. Exercise offers are presented that combine movement and perception impulses with the promotion of foreign languages. This pleasurable approach to dealing with language opens the opportunity for German-speaking students to have their first experiences with the neighboring Slovak language and to consolidate the German vocabulary for Slovak-speaking pupils. This promotes the social interaction of the two language groups and is fun. Since the language corner in the corridor is freely accessible, it can be visited repeatedly by all interested children (even without a teacher) both in the morning and during the afternoon care.

Our further goal is to expand the scope of the bilingual offer and to share our positive experiences with other schools and kindergartens in the border region.

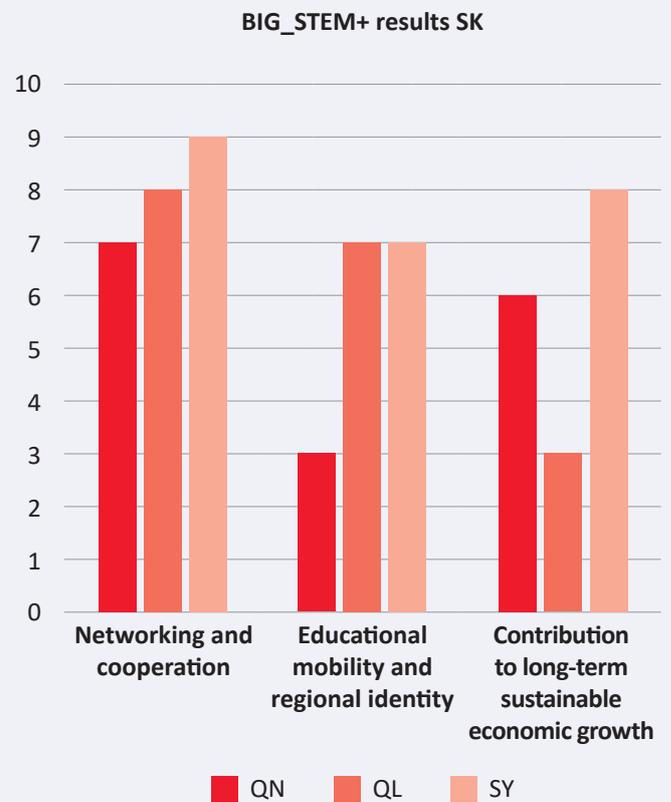
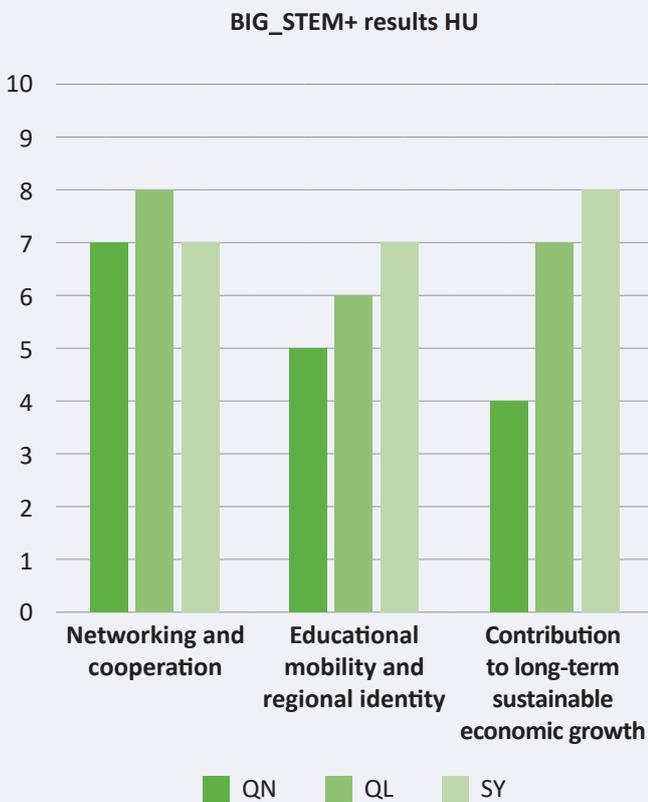
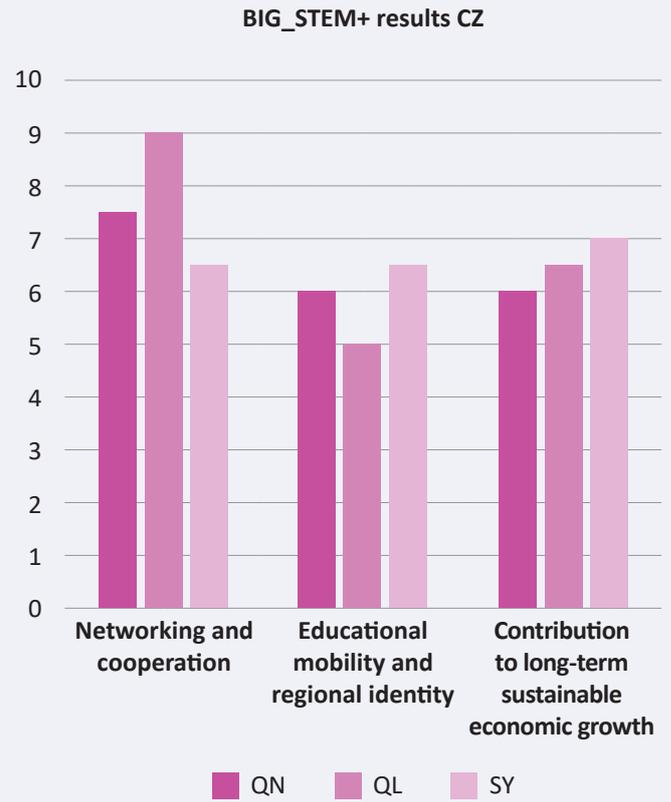
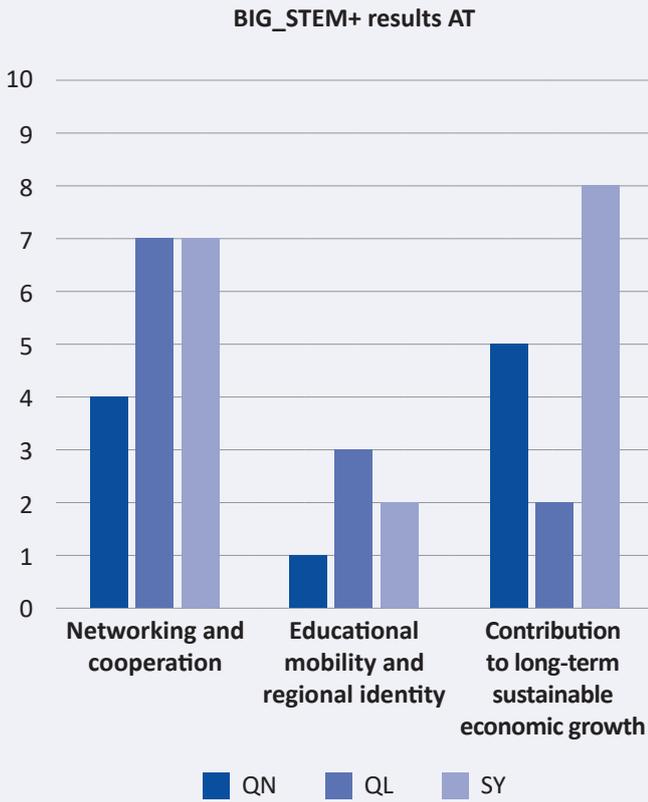


Figure 6: Assessment of the achievement of the results by region (n= 27; 2020)

At **the project level**, small differences become visible. The following three sub-chapters summarize the details.

	AT			CZ			HU			SK		
	QN	QL	SY	QN	QL	SY	QN	QL	SY	QN	QL	SY
<b>Networking and cooperation</b>	4	7	7	7,5	9	6,5	7	8	7	7	8	9
<b>Educational mobility and regional identity</b>	1	3	2	6	5	6,5	5	6	7	3	7	7
<b>Contribution to long-term sustainable economic growth</b>	5	2	8	6	6,5	7	4	7	8	6	3	8

**Table 2:** Assessment of the achievement of results from the perspective of the several projects

## 5.1 Very good cross-border networking and cooperation

For BIG\_STEM+ to be successful in cross-border networking, several different participants are necessary, who also complement each other and work well

together. The partners and target groups are partially described in the Relationship Capital – which is about the future development of the educational network.



### Students meet students – visit of students from Lower Austria in Bratislava (BIG SK-AT)

In the framework of the EU project „Educational Cooperation in Border Regions SK-AT“ visited students of 5A in the institute of early childhood education Sacré Coeur Pressbaum the partner school in Bratislava. The day was planned interactively by the Slovak students both at school with different musical activities and in the city center of Bratislava. At the Bibiana Children's Museum, the students had the opportunity to make bookmarks and write their names in cuneiform on small clay plates as part of a calligraphy exhibition. The focus of our event was

on bringing languages to life in a lively environment. This works especially well when there is a lot of laughter, when telephone numbers are exchanged and strangers become friends.



**Figure 7:**  
© BAfEP Pressbaum

### Networking and Cooperation



Figure 8: Assessment of networking and cooperation, QQS by region (n=27; 2020)

#### 5.1.1 Satisfactory quantity of cross-border networking and cooperation

There was success in Austria when the kindergartens and schools participated in the network. It would be expedient if **people in key functions** from kindergarten and school administrations actively participated in the network to be able to implement decisions and thus reduce the current bottleneck (40%).

The Czech project coordinators rate this position the highest at 75%, while in Hungary there is still potential for expansion for new participants (e.g.,

Zala county) using a larger database. In Slovakia, further cooperation with other partners in the field of bilingualism (municipalities, education administration, and training institutions) is important.

Against the background of a growth paradigm, a quantitative expansion of network actors is possible and desirable. A critical factor from which “cross-border (language) education” becomes self-sustaining is not yet within reach.

### 5.1.2 Perfect quality of cross-border networking and cooperation

Overall, the quality is rated high (80%). The Austrian coordinators see themselves and the project partners as **the right actors**. In many respects, decisions and resources are often required by politicians.

The Czech rating of quality is the highest (90%). The Hungarian and Slovak ratings are similar (80%). The participants involved by now are already the right ones, but a **reinforcement in the STEM** field as well as by other colleges or universities would enable a further improvement. From a Slovak point of view, technology partners must also be involved in digitization.

Thanks to the development of applications the main actors are involved in BIG\_STEM+. Because of funding rules, however, some people who could make a very strong contribution are still outside the network. An addition of scientific partners would also make sense.

### 5.1.3 Good system of cross-border networking and cooperation

Overall, the aim of cross-border networking and cooperation with the highest system (68%) is being worked on. This is in line with the Interreg objectives. A regional comparison shows high homogeneity.

However, the Austrian coordinators lack supreme authority to implement cross-border networking and cooperation in a sustainable and long-term manner. Educational projects are long-term measures and need **stable framework conditions in the program guidelines for implementation in the long term**.

The Czech project coordinators rate the quality highest (90%), but there is still a **need for further cooperation with primary schools and new secondary schools**. The Hungarian rating is similar (80%).

From a Slovak point of view, the mobility of the participants is very systematically deepened through

the development of the network and regular cross-border working groups on cooperation. The exchange of experiences and opinions helps to prevent misunderstandings. The network also benefits from further partnerships and relationships with the other participants that the individual project partners bring.

Through numerous project structures, partner meetings, and joint work packages, networking is a very central goal that is also formally achieved. And yet even more integration would be desirable. Time to develop an understanding of the situation of the partners, perhaps even trust, is scarce due to limited resources. Again and again, “hard formal requirements” are given higher priority than the long-term effective “soft” cooperation elements.

### 5.1.4 Recommendations on cross-border networking and cooperation

For cross-border networking and cooperation in the BIG\_STEM+ context, cross-border visiting, excursions, internships of students, and educational partnerships between kindergartens and schools are already being used. In addition, there are cross-project measures such as symposia, joint language courses, open lectures, etc.

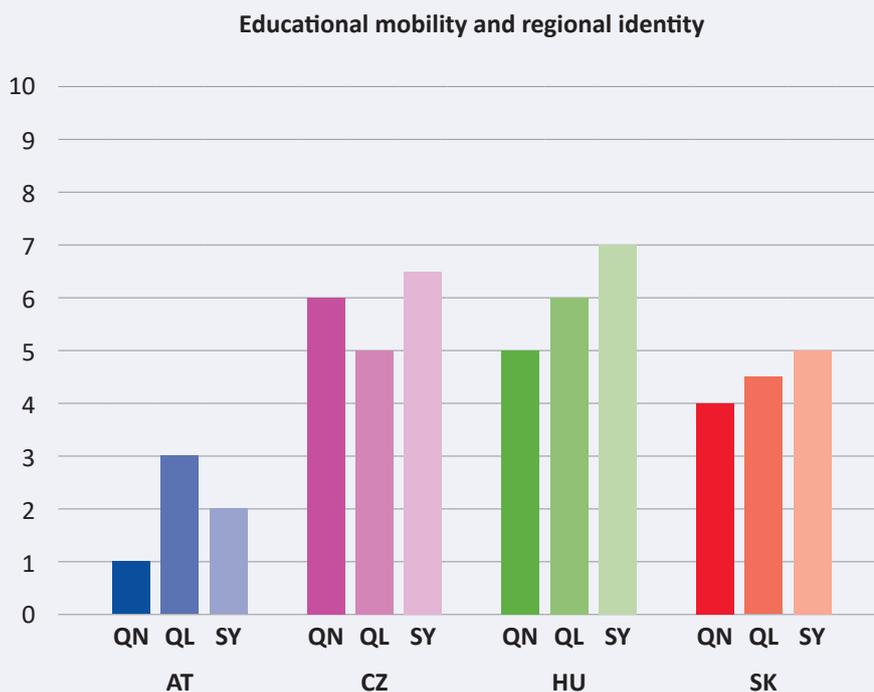
*To support the achievement of goals and sustainable success, ensuring resources, continuity of programs and intergovernmental agreements (analogous to school visits also for kindergartens) are effective in increasing educational mobility.*

With BIG\_STEM+, needs become visible and possibilities are shown.

A quantitative **expansion of the network** and the institutions involved is possible and desirable. The quality of networking is already optimal, and the system with which networking is being worked on is already good, so a favorable development in the medium term is very likely.

## 5.2 Low educational mobility and regional identity

In border regions, mobility often means migration from a region to a real or only supposedly economically more attractive region. This can lead to an unfavorable demographic change. The development of regional identity through education (multilingualism as well as science education) enables independence and local development, thus providing economic strength. Conversely, a rigid structure or lack of educational mobility cannot adequately support the necessary social and economic change.



**Figure 9:** Assessment of educational mobility and regional identity, QQS by region (n=27; 2020)

### 5.2.1 Heterogeneous and unsatisfactory assessment of the extent of mobility

Mobility should not be understood as being “only in one direction” but should be balanced as far as possible. Despite ecological limits, mobility is a decisive factor for long-term economic development. An effective force against “emigration” is high education and local anchoring.

The Austrian coordinators critically assess the quantity of mobility as insufficient. From an Austrian point of view, **educational mobility only takes place in one direction**. Mobility is not yet possible in compulsory education. (Legal/curricular) fundamentals have yet to be created, through **EU law (border district)**. In addition, the public must be sensitized to this topic. Hungarian coordinators feel that educational mobility tends to work only in one direction. Particularly, **Hungarian lessons are not available in the other countries**.

The Czech project coordinators rate physical mobility across the border to work in the neighboring country or to shop - with Covid-related restrictions - as good. Related to the BIG\_STEM+ projects, cross-border mobility is very valuable – internships, excursions, internships, etc., but in fact not possible in 2020 and 2021. **Educational mobility**, i.e., attending a kindergarten or school in the neighboring country, is **considered rather impossible**.

Overall, the goal of mobility has not yet been ideally achieved. Long-term trajectories can often only be changed slowly and yet there are effective methods such as early childhood language and competence development. EU legal barriers currently block educational mobility and would have to be changed.

### 5.2.2 Are we sufficiently able to shape the regional identity of young people to achieve the goals set?

Regional identity does not mean developing local patriotic tendencies, but also getting to know other regions while remaining aware of one’s own origin and thus returning to one’s homeland.

The Austrian coordinators also very critically assess this dimension as deficient and call for **sensitization** to intercultural and personality-building measures. The Slovak coordinators assess this similarly, but not quite as critically, because of current restrictions. A special opportunity for bilingualism is offered by the regional proximity of two capitals for the development of a European perspective.

According to the Hungarian coordinators, young people are much more open to other nationalities through the BIG\_STEM+ events. It remains unclear whether they will then also seek their fortune in other regions and then possibly return.

From the Czech point of view, **more intensive work with parents** would be necessary within the framework of the projects. In addition, young people must be given a reason to return to their regions after their studies in larger cities (incomes, better job offers, etc.).

In some cases, it is possible to improve educational mobility and the regional identity of young people. This is the case where systematic work can be done for this. It is a very slow process that must be pursued over decades. Currently, there is still a deficit in the broad impact of the BIG\_STEM+ projects to reach their full potential.

### 5.2.3 Is the way we are developing the regional identity of young people already systematic enough to achieve our goals?

Languages and education shape the identity of people as worldviews and ideological concepts. Those who can experience “more” of it at an early stage are usually also more autonomous and can act in more diverse ways.

According to the Austrian coordinators, mobility and regional identity are **not yet being developed systematically enough**, but the approach of the projects is a correct one.

The Czech coordinators say that the systematic work on mobility and regional identity within the framework of the projects is made more difficult by the fact that after three years new, innovative ideas must be described in the project application. The projects must then focus on new topics that systematically build on each other, but usually do not allow systematization regarding the development of mobility for young people. However, this depends on the structures of the individual institutions. In the case of Vysočina Education, it is very feasible for children to be coached and included from kindergarten to high school.

According to the Hungarian coordinators, children become more autonomous and can act in more diverse ways because of individual projects. The Slovak coordinators say that the non-continuous development of the neighboring languages in the higher school levels undermines the system, which is developed over many years, especially in kindergartens.

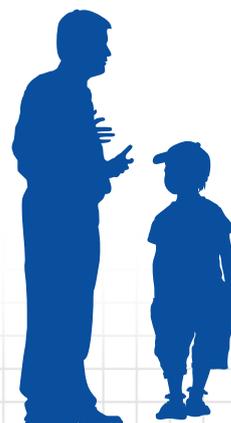
### 5.2.4 Recommendations to improve educational mobility and regional identity

In the context of the BIG\_STEM+ projects, mobilities were deliberately initiated. The focus was placed on the overall personal educational work within the language promotion measures.

To optimally support these goals, long-term **support**, even **more systematic access to the children**, starting with the first educational institution and parents becoming more **aware** of the importance of “mobility” even outside the educational institutions would be helpful.

Without the projects in the individual Interreg programs, educational mobility would only be considered to a very limited extent. There are some very good and inspiring examples (see also “Stories”), but this is not always enough to counter the strong urbanization pressure. There is also still potential for development in the systematic support of educational mobility, especially because the projects are working at a very early stage of human life.

*The pandemic-related interruption of very good exchange programs should be lifted as soon as possible and further developed.*



### 5.3 Good contribution to long-term sustainable economic growth

In the long term, economic growth means employment, prosperity, social stability and peace if it is sustainable, i.e., without particular damage to natural or social resources. Knowledge is a particularly

sustainable resource that does not lose value or substance through frequent use, but on the contrary becomes more valuable through use.

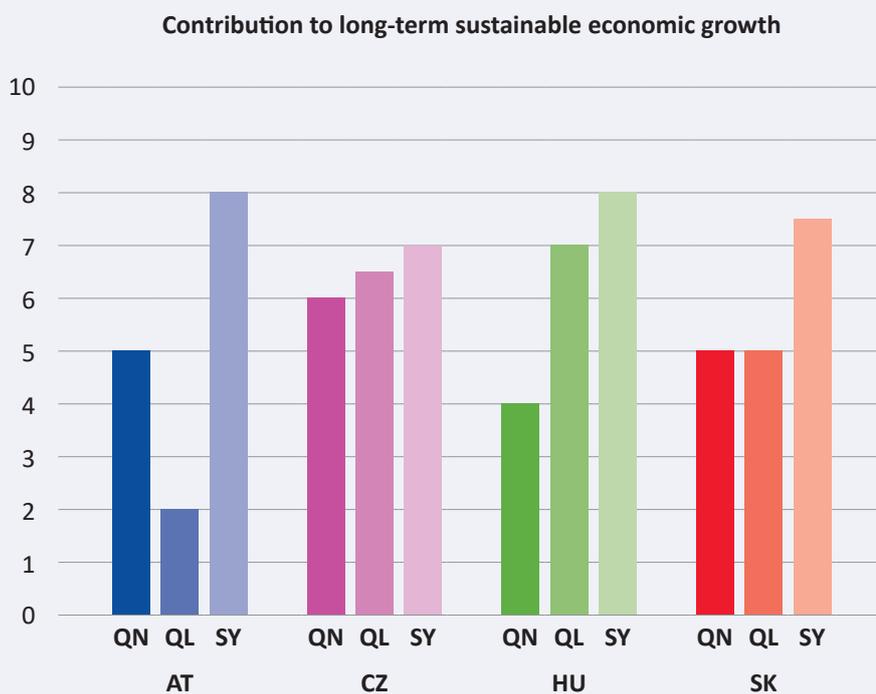


Figure 10: Assessment of the contribution of BIG\_STEM+ to long-term sustainable growth, QQS by region (n=27; 2020)

### 5.3.1 Different growth in the regions

Border regions offer opportunities as well as risks. Cross-border commuters realize arbitrage effects from favorable costs on the one hand but high wages on the other. These differentials allow for developments that can only be realized if the legal foundations for this are also available: freedom of movement on the macro level, overcoming language barriers, but also cultural adaptability and understanding.

According to the Austrian coordinators, social and demographic conditions are changing rapidly, while awareness of this in the broad society is lagging. More responsibility at the political level would be desirable to launch mandatory bilingual education systems in the border regions.

The Czech coordinators confirm the high mobility of people looking for work. Many Czechs work in Austria, while individual Austrians set up companies in the Czech Republic. In the border region, there is (or was before the Covid crisis) very low unemployment and at the same time very low-quality job offers. Therefore, many young people prefer to move to the larger cities of the region. These effects are exacerbated by poor infrastructure in the border region kindergartens, elementary schools, new secondary schools, doctors, public transport, shops, etc.

The Hungarian project coordinators still see economic growth as poor (40%) and thus not sufficient to counteract the pressure of urbanization. From a Slovak perspective, uncertain financing is a serious obstacle to sustainable growth.

### 5.3.2 Satisfactory sustainability of the growth

The reasonable use of resources allows long-term development. A solid knowledge base is crucial to have technologies or innovative methods to deal more effectively with scarce resources. I. The sooner it is developed and the deeper it is anchored, the more likely it is to succeed.

This also applies to the BIG\_STEM+ network: the hard development work loses its value if it is not really secured in the long term. That cannot mean being dependent on central funding forever. Sustainability arises when the network initiatives are supported also locally.

The Austrian and Slovak coordinators **see a lack of sustainable financing** at all levels (regional/national/international), which is why they only rate this topic at 20%. The border region lacks the bilingualism that existed and was common in the past and became artificially separated by the political systems of the past.

The Czech coordinators argue similarly, albeit at a slightly higher level (65%). Without the Interreg projects, the current sustainability in language teaching cannot exist. Their implementation would immediately stop without these projects, even if in individual cases municipalities could bear the costs, depending on political decisions. Hungarian coordinators also emphasize the importance of central financing and are working on it.

Without planning security, the network's current successes are precarious. Nevertheless, it is only partly in the hands of the participants, but the task of politics to use the time and anchor the many successes in the regions in such a way that meaningful further support can also be ensured locally within the framework of the subsidiarity of the regions.

### 5.3.3 Is the way we are developing long-term and sustainable growth systematic enough to achieve the goals?

The contribution of a network should neither be overestimated nor underestimated. “General economic growth” depends on many factors, including external ones. The efficiency of an effective educational network is undisputed. At least the safeguarding of one’s own existence should be ensured thanks to the positive effects of knowledge and learning.

The project coordinators assess the individual Interreg projects as being highly system for achieving long-term sustainable growth. But it takes time, long-term support, and the political decision-makers responsible for it, to ensure this sustainable anchoring.

### 5.3.4 Recommendations for sustainable economic growth

Within the framework of the individual Interreg projects, but also in synergy cooperation between the projects, there are already **meetings** of the administrations, kick-off and closing events, symposia, strategic partnerships, stakeholder involvement, regional steering group, and networking meetings with a focus on regional long-term and sustainable growth. In addition, **even more, political interest and commitment** would be desirable. The installation of persons responsible for EU affairs, (such as the Europe Office of the Directorate of Education in Vienna), could provide these impulses. This could be supported by an active communication policy from the network.

**Coordination** with other networks as well as integration into further regional initiatives in close cooperation with local administrations will significantly increase the likelihood of success.

# Acknowledgement

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The editors would like to thank all project partners for their excellent cooperation in the projects described in this report and in the context of this Intellectual

Capital statement. Without the following persons, this report would never have come to fruition (alphabetical order, information without academic title):

- Babai Zsófia** – University of Sopron, Benedek Elek Faculty of Education (HU)  
**Badidová Martina** – Daphne – Institute of Applied Ecology (SK)  
**Barborik Dominique** – Austrian Friends of Children- Vienna State Organization (AT)  
**Běhounková Zuzana** – Vysočina Education (CZ)  
**Brychova Alice** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Chvatalova Martina** – European Office of the Board of Education for Vienna (AT)  
**Dolejska Milena** – Vysočina Education (CZ)  
**Effenbergerová Dagmar** – Bratislava Nové Mesto (SK)  
**Emrich Martina** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Halinka Péter** – West Pannonian Nonprofit Ltd. for Spatial and Economic Development (HU)  
**Hrůšová Nikola** – Institution for Further Training of Teachers and Center for Services to Schools Č. Budějovice (CZ)  
**Jezna Maria** – Deutsche Schule Bratislava (SK)  
**Jonášová Marta** – Bratislava Nové Mesto (SK)  
**Kadlec-Melišova Ľubica** – Mesto Senica (SK)  
**Komenda Iren** – Austrian Friends of Children- Vienna State Organization (AT)  
**Kříčková Vlasta** – Institution for Further Training of Teachers and Center for Services to Schools Č. Budějovice (CZ)  
**Major Andrea** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Melnik Alexander** – European Office of the Board of Education for Vienna (AT)  
**Melnik Kristina** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Micikova Katarina** – European Office of the Board of Education for Vienna (AT)  
**Nadine Szep-Lafleur** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Portschy Mónika** – West Pannonian Nonprofit Ltd. for Spatial and Economic Development (HU)  
**Prokeš Ivo** – Institution for Further Training for Moravia (CZ)  
**Rammesmayer Christine** – Burgenland State (AT)  
**Řezníčková Marcela** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Rozprýmová Hana** – JCMM, z.s.p.o. (CZ)  
**Sedláčiková Lucia** – Bratislava Nové Mesto (SK)  
**Sharifpour Langroudi Margret** – European Office of the Board of Education for Vienna (AT)  
**Slobodová Gabriela** – Office of the Lower Austrian Provincial Government, Dept. Kindergarten (AT)  
**Steiner Karin** – Austrian Friends of Children- Vienna State Organization, (AT)  
**Štípková Peregrína** – Centre for leisure Lužánky (CZ)  
**Suchankova Ivana** – Institution for Further Training for Moravia (CZ)  
**Walter Katalin** – University of Sopron, Benedek Elek Faculty of Education (HU)



# Imprint

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**Publisher and owner:**

Office of the Lower Austrian Government,  
Department of Kindergartens

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Intangible Assets Consulting GmbH

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**Date of assessment workshops:**

Workshops 2020-09-30, 2020-1014; 20201202  
(AT-HU, AT-CZ); interviews between 2020-10-14 and  
2020-11-27 (AT-HU, AT-CZ); workshop and Interviews  
during April and Mai 2021 (SK-AT)

**Method and tools used:**

The individual Intellectual Capital statements were prepared using the method “Intellectual Capital Statement - Made in Germany”, which is recommended, published, and edited by the Federal Ministry of Economics and Technology (Berlin), and prepared using Google Documents and flourish.com.

**Design:**

Team Wagner DESIGNSTUDIO  
teamwagner-design.at

**Print:**

Druckerei Rutzky GmbH

**Translation:**

Primáta Kft., 9700 Szombathely, Lovas u. 3, Hungary

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The Intellectual Capital Statement was carried out within the framework of the projects EduSTEM (Education in Science, Technology, Engineering and Mathematics ATCZ220), BIG\_inn AT-HU (Educational Cooperation in the Border Region AT-HU\_innovativ ATHU129) and BIG\_ling SK-AT (Educational Cooperation in the Border Region SK-AT\_bilingual V801) and was funded via cooperation programs INTERREG V-A Austria-Czech Republic, INTERREG V-A Austria-Hungary and INTERREG V-A Slovakia-Austria by the European Regional Development Fund (ERDF).





