



## **D05.1 – Teaching Innovation Mapping state-of-the-art report**

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# Active Learning in the Context of the Arqus Alliance – Initial Mapping

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## 1 EXECUTIVE SUMMARY

The growing recommendation for the implementation of active learning practices in higher education is at the basis of a mapping study examining the practices and approaches, used by faculty members of undergraduate and integrated master's courses, at the Universities of the Arqus Alliance. The mapping has two main sections of results. The first section reports the application of surveys in part of the universities of the alliance, namely the Universities of Minho, Padua and Wrocław. The second section reports on qualitative and previous studies results related to the state of active learning at the University of Graz, University of Leipzig, University of Lyon and University of Vilnius. Thus, the mapping aimed to identify teaching-learning approaches implemented, collecting perceptions from faculty members.

Regarding the survey, it involved more than 1000 teachers from the three universities mentioned above. The study participants were linked to various areas of knowledge in diverse faculties of those universities. The majority of respondents have more than 10 years of teaching experience. The mapping data showed that most of the universities have a diverse training offer related to active learning.

The results allow us to conclude that the majority of faculty members use active learning practices and specific approaches, such as Problem and Project-Based Learning or Case Study. Technologies supporting active learning were also used with high frequency by more than 40% of respondents. Group projects were a commonly used practice, while simulated practice is rare. Gamification is the less-reported approach in all three universities.

Regarding assessment, written exams prevailed, with project work and oral presentations also referred to as being used frequently. The survey findings concerning assessments highlight that teachers are to some extent revamping their teaching methodologies, particularly by integrating technologies to facilitate classroom interactions and promote students' self-assessment. This represents a significant achievement, even though the transformation into active, learning-centred approaches, requires more student autonomy in participating, more problem solving and experiences triggering their creativity. Peer assessment, formative assessment, and similar strategies warrant further attention.

Regarding the factors that inhibit the adoption of active learning, teachers identified workload and large class sizes as the main obstacles. The lack of training, low recognition, lack of suitable spaces, and student resistance were also factors mentioned by respondents as inhibitors. Facilitators for adopting active learning included a focus on students' needs, positive feedback from students, relevant training provided by the universities, and opportunities to share experiences with colleagues. The analysis also identified several themes to promote the implementation of active learning, managing workload, continuing ongoing training, increasing recognition of teaching activities in career progression, and collaboration between colleagues.

It is important to acknowledge that any innovation in teaching requires multiple cycles of redesign, testing, and implementation, and resilience to maintain the process. Therefore, it is clear that participants are in different stages of a transformative process, which is expected to evolve over the long term.

## 2 INTRODUCTION

“Active Learning” refers to dynamic, engaged, and reflective learning experiences (Bonwel & Eison, 1991; Lima et al., 2024) that vary in implementation depending on specific fields of knowledge and contextual factors (Lombardi et al., 2021). Within this framework, teaching and learning entail exploring reality through inquiry, observation, and discourse, fostering creativity and the capacity to generate and innovate ideas. Such pedagogical approaches gain significance as research indicates that active learning methodologies can enhance learning outcomes (Bonwel & Eison, 1991; Prince, 2004) and mitigate failure and attrition rates (Freeman et al., 2014; Theobald et al., 2020).

The implementation of instructional approaches that promote active learning has been part of the goals of most worldwide higher education institutions, that seek to prepare students for new professional and social environments requiring a set of skills not acquired with traditional lecturing. Given the objectives of the Arqus Alliance in the promotion of new teaching and learning environments through collaboration and experimentation, it becomes increasingly relevant to reflect and think about current practices. To achieve this goal, it is first necessary to assess current teaching and learning practices. This task has been addressed within the WP5, which has been committed to developing a mapping of teaching innovation within the Alliance.

This report presents the main findings of the first mapping exercise completed within the framework of the Arqus Alliance, combining information reported by all the partners, except Maynooth University and the University of Granada. The information gathered for the purpose of this mapping is of a different nature. Although an early attempt was made to harmonise the procedures concerning data collection, this was not possible for all the universities involved due to the internal arrangements of each organization. It should be noted that the University of Granada also applied a planned survey, but the results were not yet available.

A questionnaire on self-reported teaching practices to be distributed to the teaching staff was prepared and discussed within the WP5. The questionnaire was originally proposed by the University of Minho, drawing on the existing literature (Eagan et al., 2014; Landrum et al., 2017; Markham et al., 1998; Walter et al., 2016). The questionnaire was validated at the University of Minho through the implementation of a pre-test, held in the form of ‘think aloud’, and the specific approaches of Active Learning were explained using as inspiration the terminology presented in the annexe of Lima et al. (2024). Minho, Wroclaw and Granada universities have distributed this same questionnaire inquiring teachers who have taught in the academic year 2022/23. Due to previous arrangements and experience, Padua has used a different instrument that has, nonetheless, a similar structure and questions, which means its responses can be compared to the ones obtained in the survey performed by the mentioned four universities. Leipzig, Lyon, Graz and Wroclaw decided to contribute to this report with a qualitative assessment of the teaching practices held within their institutions.

This report contains two main evaluation chapters, one addressing the mapping performed through survey studies, and another presenting the qualitative assessment by each institution. Table 1 presents a summary of the data used for the report on active learning.

*Table 1. Summary of the Data used for the report on active learning.*

<b>Institution</b>	<b>Type of mapping</b>	<b>Period of administration</b>
<b>University of Graz</b>	Qualitative assessment	n.a.
<b>University of Leipzig</b>	Qualitative assessment	n.a.
<b>University of Lyon</b>	Qualitative assessment	<b>n.a.</b>
<b>University of Minho</b>	Survey sent by email	May 2023
<b>University of Padova</b>	Survey sent by email	End of semester 2023
<b>University of Vilnius</b>	Qualitative assessment	n.a.
<b>University of Wroclaw</b>	Survey sent by email	23 October to 16 November 2023

### 3 MAPPING - SURVEY

This section presents the results of the survey administered to the teachers, concerning self-reported active learning specific approaches used, as well as classroom interactive practices using technology and assessment practices. This section ends with the results concerning factors hindering or promoting active practices mentioned by the participants.

The Teaching and Learning Unit at UMinho, known as Centro IDEA-UMinho, engages in a diverse range of activities to support innovation and development in teaching and learning. These activities include the implementation of funding opportunities aimed at fostering innovative projects. Additionally, the unit provides professional development and training opportunities for faculty members, covering areas such as active learning, assessment methodologies, and technologies for the enhancement of teaching and learning. It also offers training sessions tailored for student representatives to enhance their engagement and participation in academic affairs. Through workshops and seminars, the unit facilitates discussions on integrating artificial intelligence in learning environments. Furthermore, it actively contributes to the scholarly community by publishing scientific articles, and books, and developing research projects. The unit also fosters communities of practice in teaching and learning within the university, promoting collaboration and knowledge sharing among educators. As part of the Arqus - European University Alliance and Erasmus+ projects like [PBL4COLLAB.TT](#), the unit collaborates internationally to advance teaching methodologies and practices. Additionally, it provides consulting services and training programs to external organisations, extending its expertise beyond the university campus. Overall, the IDEA Centre plays a pivotal role in promoting innovation in higher education.

The Teaching4Learning at Unipd is an actual plan for the development of teaching and e-learning skills of the teachers at the University of Padua, started in 2016. It offers a comprehensive range of training courses aimed at training the university's teaching staff on active teaching/learning methodologies and strategies in the classroom and online with different levels of complexity. Initially, a single introductory Basic course, at voluntary enrolling, was offered, but the program has since expanded to include distinct courses: Basic-New Faculty (T4L1), Advanced (T4L2.0), T4L Change Agent, and T4L Teaching Online. The Basic-New Faculty (T4L1) course has become the most popular offering and since September 2022 it has become mandatory for all new temporary Researchers involved in teaching. The main aim is to promote a conscious reflection and use of interactive and collaborative teaching practices from a learner-centred perspective, empowering instructors to refine their teaching methodologies, embrace student-centred approaches, equipping individuals with teaching skills, designing effective learning modules, and fostering a sense of community. The program witnessed a surge in course offerings over the years, evolving from department-based to university-wide initiatives, fostering cross-departmental collaboration. Additionally, an Advanced course (T4L 2.0) was introduced to provide deeper training in pedagogical techniques, focusing on instructor-student dynamics, syllabus development, and feedback management. This course has changed during this Academic year (2023/2024) and consists of attending a series of compulsory and elective workshops, offering to the participants flexibility in their training journey, and allowing them to tailor their experience to their specific needs and interests. Specialization courses, such as T4L Teaching Online and T4L Change Agents, were also introduced to address emerging needs, including adapting to online teaching during the pandemic and fostering educational change in all departments. T4L Together meetings were organized to facilitate collaboration and knowledge sharing among instructors, particularly during the transition to online teaching. At the end of each training course, participants are entitled to receive the T4L Open Badge, a digital certificate that highlights the skills and abilities acquired and the learning outcomes achieved, the methods used for testing and evaluation, the University that issued it and the identity of the person who received it. The program's participants have steadily increased over the years, and the T4L program continues to empower instructors and enhance teaching quality across the university.

The University of Wrocław actively supports its employees and encourages them to engage in activities aimed at enhancing their teaching competences. This support includes opportunities for attending courses and training sessions offered both internally by the university and externally by other organizations. The first option encompasses courses and training sessions organized within the faculties, including those integrated into postgraduate studies and classes provided by a dedicated unit such as the University Distance Learning Center. External training support may entail partial or full coverage of participation costs, providing employees with financial assistance to engage in these valuable learning opportunities. Outstanding contributions to teaching are recognized through the prestigious Teaching Award and Rector's Awards. Academic teachers can independently pursue the Teaching Award, while the Rector's Awards are initiated by the management staff. Teaching seminars are typically organized within individual Faculties to address specific needs, yet they are not usually conducted on a regular basis. Instead, they are tailored to address specific requirements as they arise. These activities are frequently linked to the implementation of specific projects, often co-funded by the European Union.

Besides asking questions on the socio-demographic aspects of the teaching staff, the questionnaire used a Likert scale to assess the frequency of use of active learning approaches and in-class practices. Types of assessment were also approached by a Likert scale of frequency, and teachers were asked to identify the main aspects that hinder or promote the adoption of active learning. Data collection & Socio-demographic Information was also collected.

In the three universities in which the survey was administered, different levels of participation were registered as represented in Table 2.

*Table 2. Number of responses*

Institutions	Number of responses
University of Minho	266 (response rate: 16,5%)
University of Padova	241
University of Wrocław	644

Samples surveyed are varied, reflecting the diversity within institutions. Gender was balanced among participants with slight variations among universities. Minho and Wrocław surveyed more women, and Padova more men, but in the three institutions differences are minimal.

Most respondents have already a solid experience in teaching. At Minho, the mode of the distribution is situated in the 51-55 interval, with 15% being less than 40 years old. In Padova, more than half of the teachers (59%) had accumulated more than 10 years of teaching experience, a situation that is similar in Minho, with the median of the distribution being 23 years. In Wrocław, the average was 17,5 years.

Regarding the disciplinary fields, assessed by the different schools of the institutions, they were all represented in the three institutions, though with variable levels of participation. It should be noted that these three universities have several activities for the promotion of innovation in teaching and learning processes.

### 3.1 SPECIFIC ACTIVE LEARNING APPROACHES

The **University of Minho** response's regarding specific approaches to active learning shows some diversity in adoption by teachers, with a predominance of problem or project-based learning. Case studies are also frequently used, with over 50% of teachers using them often or sometimes. Gamification and games are the



approaches with the lowest self-reported frequency of use. Worth mentioning for its low reported usage rate is the practice of using short active learning activities (such as Think-Pair-Share), which, due to their flexibility and reduced time impact, could initially suggest a greater preference from teachers, as it is the case in the University of Wroclaw.

In the application of the survey on the **University of Wroclaw**, the respondents were asked about the frequency of using specific active teaching/learning approaches in the academic year 2022/2023, considering the following seven approaches: (1) short active learning activities; (2) team learning; (3) problem-based learning; (4) project-based learning; (5) case study; (6) gamification and (7) flipped classroom. The most common methods indicated by the respondents were short active learning activities (N = 180) and (5) case studies (N = 143) while the gamification method, as in Minho University, turned out to be the least frequently indicated – the answer “never” was dominant (N = 425).

At the **University of Padua**, there were few responses about the *simulative/explorative methods*. The results showed Case Studies as the most used with 50 respondents out of 273 indicating using it always, while Role Playing and Gamification, again like in Minho and Wroclaw, were used very little. After the Case Study, the respondents indicated Problem-solving, Problem-Based and Project-Based Learning as the specific most used, respectively with 40, 39 and 33 out of the 273 answered using it always.

The **integration** of results of the University of Minho, the University of Padua, and the University of Wroclaw are illustrated by Figure 1. The integration of the results shows a predominance of the application of the following specific approaches: Case Study, Short Active Learning activities, Project-Based Learning, and Problem-Based Learning.

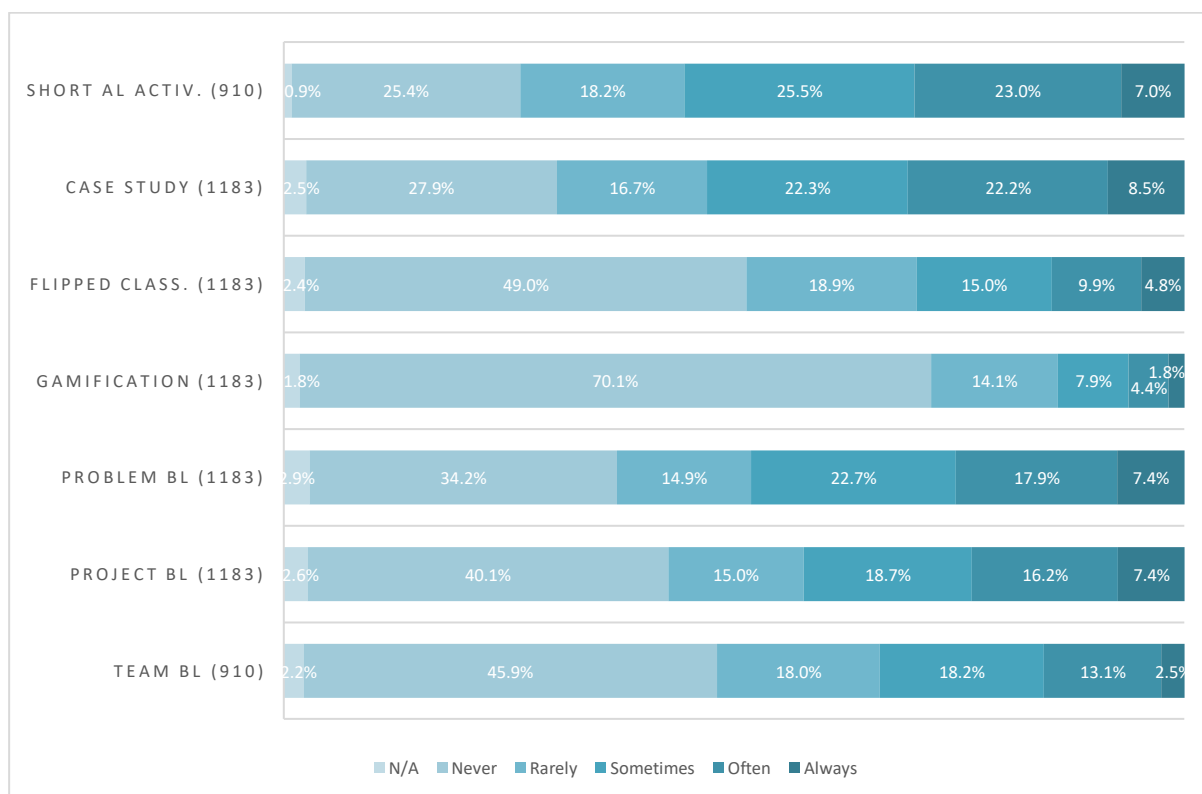


Figure 1. Specific Approaches to Active Learning - frequency of use.

### 3.2 CLASSROOM INTERACTIVE PRACTICES USING TECHNOLOGY

The use of technologies in the classrooms is a powerful method to implement active learning approaches (Plump & LaRosa, 2017; Poirier & Feldman, 2007). Many technologies can be adopted, some of which have been available for many years (e.g. videos) others are of very recent development (e.g. Virtual reality or AI). Although the Universities of Padova, Wroclaw and Minho surveyed the use of these technologies, the dissimilar approaches to data collection don't allow full data integration, as in some cases different technologies are adopted and surveyed.

At Wroclaw University, as declared by the respondents, the first two sets of tools, (1) tools for searching information, digital content, and data (N = 144) and (2) platforms for sharing data/materials (N = 90) are used most often. In contrast, (5) platforms for interacting and engaging learning communities (N = 455) and (7) platforms for facilitating problem-solving (N = 425) were used sporadically by class instructors in the academic year 2022/2023 (the dominant answer was "never"). Figure 2 summarises all respondents' responses; the percentages add up in the columns. However, due to the lack of individual responses in this category (not exceeding 1% of all responses), their number does not add up to 644.

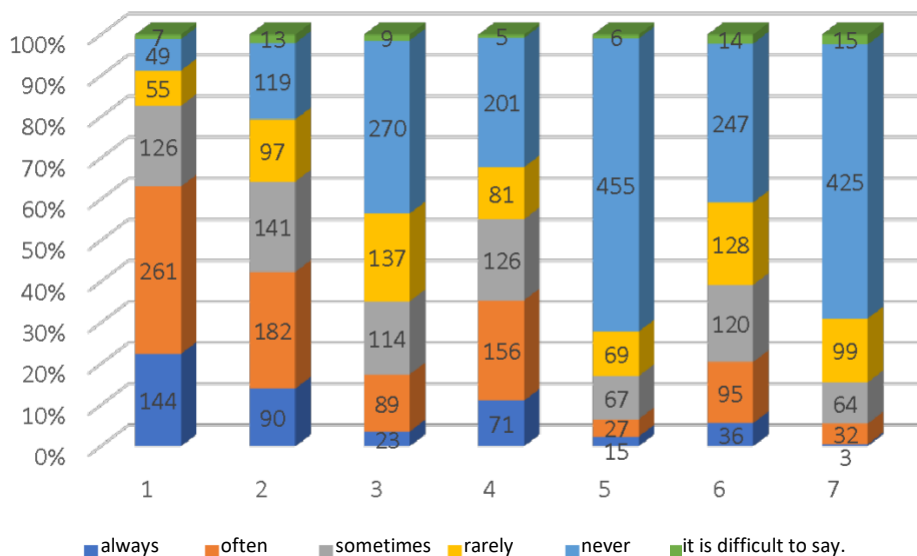


Figure 2. Classroom technologies at Wroclaw University.

The University of Padua survey (Figure 3) shows that only the most traditional approaches to technology usage, i.e., Information Search and Information/Content Sharing through assignments, displayed a high frequency of adoption. Frequencies of the other five approaches indicated low usage of technologies for communicating, creating, interacting, supporting teaching, and problem-solving.



Figure 3. Classroom technologies at the University of Padua

The survey results for the use of technology in the classroom at the University of Minho are reported in Figure 4. More than 20% of teachers report using video always or often, in addition to 35% who do so a few times. Virtual laboratories and virtual reality technologies are the ones with the lowest frequency of use, which can be explained by the fact that, on the one hand, they require greater competence on the part of the teacher for their use, and, on the other hand, because they are not as easily accessible and available as the previous ones.

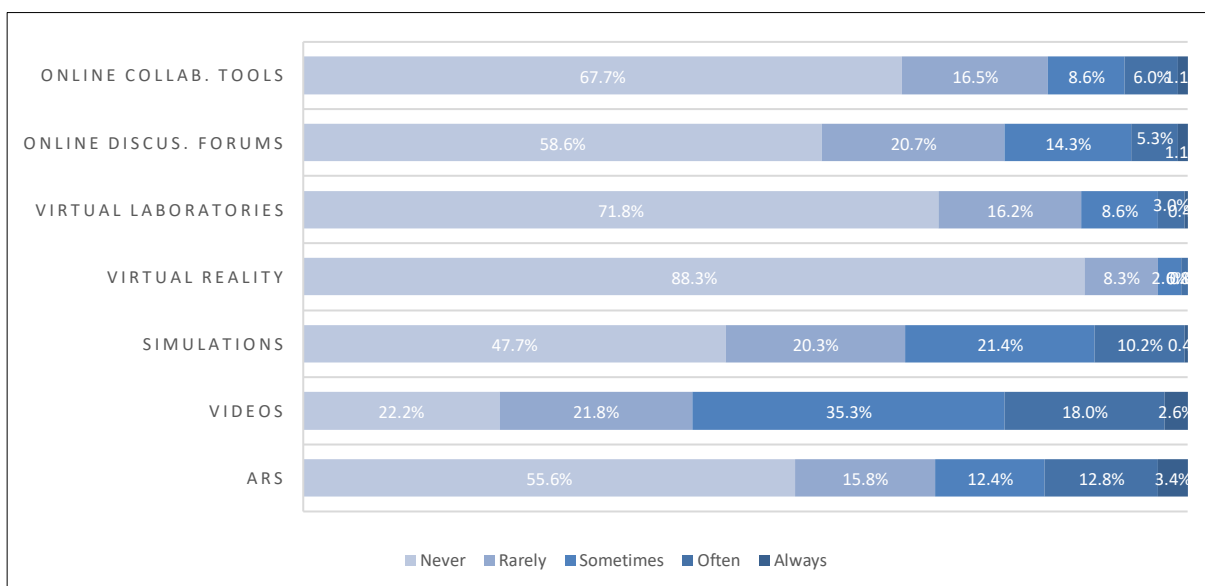


Figure 4. Classroom technologies at the University of Minho

Comparing the results of the three institutions (Minho, Padova and Wroclaw) it emerges that technology adoption is a common strategy in the classroom with content-sharing technologies (eg. platforms like Moodle, and Google Drive) being the most employed followed by tools for searching information (e.g. databases, web tools). In addition, the use of videos is also a quite widespread technology. Emerging practices platforms fostering communication and discussion, either online (e.g. chat rooms) or in the classroom (e.g. Wooclap) evidence differences among institutions, being in a positive adoption trend in Padova and Minho, less positive in Wroclaw.

Overall, the use of technology in the classroom appears to be not a common strategy and still needs to be integrated with the teaching approach. This is in part explained by the initial difficulty faced by the teachers to learn to use these tools, probably coupled with a sceptical position towards the real advantages of digital tools.

### 3.3 ASSESSMENT PRACTICES

For decades, actions related to assessment have been acknowledged as pivotal elements within active teaching and learning processes across all domains of higher education (Arruda & Silva, 2021; Black & Wiliam, 1998; Dann, 2014). The survey encompassed assessment issues from various perspectives, including:

- components integral to active teaching and learning methods,
- activities designed to assess teaching and learning outcomes,
- measures utilized to evaluate learning outcomes,
- subjects addressed in training courses, along with the exchange of exemplary practices.

The participants, members of the Arqus Consortium, stated their opinions during the survey in all of the perspective areas.

At the **University of Minho**, respondents indicated that topics concerning active learning are predominantly associated with assessment (peer review, feedback in assessment, assessment as learning) and specific approaches (PBL - Project-Based Learning, TBL - Team-Based Learning, flipped learning, gamification, CBL - Challenge Based Learning). Regarding assessment practices, the disaggregated analysis of the frequency of use reported by teachers does not bring major surprises concerning the most used assessment methodologies: the written test or exam, with only 13.5% of respondents stating that they never or rarely use this practice.

Similar conclusions can be drawn based on the responses of research participants at the **University of Wroclaw**. Only approximately 2.5% of respondents identified self-assessment and peer assessment as consistently utilized measures for evaluating learning outcomes.

At the **University of Padua**, similarly to both previous institutions, the formative evaluation and assessment strategies consist of peer evaluation (activities where the students provide feedback on a learning product or process); self-evaluation (activities where the students self-explore and assess a learning product or process produced by themselves); digital and automated evaluation (such as quizzes, multiple-choice tests, also via automated feedback); automated open-ended tests and constant monitoring (continuing/formative evaluation of tasks, including those carried out collaboratively). Similarly, according to the responses, participants in the survey utilized each strategy relatively infrequently.

### 3.4 FACTORS HINDERING OR PROMOTING ACTIVE LEARNING

Based on the literature and the experience of several teachers (namely in the think-aloud process), a list of potential factors hindering the adoption of active learning was proposed to the participants in the survey.

Teachers were asked to choose the three more important aspects that they consider to be an obstacle to developing active learning approaches and practices in their classes. The list considered the following options:

- Lack of knowledge on the subject
- Lack of relevant training on the subject
- Lack of encouragement at departmental/school level
- Lack of recognition at departmental/school level
- Student resistance
- Excessive class sizes
- Own inertia
- Work overload
- Other priorities of my university activity (research, management)
- I don't think using these approaches is important/relevant

Results to this question vary among universities, but, even though they are not presented in the same order of preference, the same hindering factors are among the most mentioned ones in the universities surveyed. The common one to all three is workload, which tops Minho's responses, is the third one in Padua and the fourth in Wroclaw. Teachers report a complex work balance, with added responsibilities, which makes it difficult to incorporate other teaching methods, which are perceived as work and time-consuming.

Teachers from Wroclaw indicate as the most common difficulty the insufficient knowledge about active learning methods (n=196), followed by the excessive size of classes (n=187). This last aspect is also among the most pointed out factors in Minho. But, although not being the most mentioned aspect, workload and other responsibilities are also among the most hinted aspects in Wroclaw and Padova. The most common difficulty indicated by the respondents of Wroclaw (insufficient knowledge/training of active teaching/learning methods) is listed as the fourth most mentioned factor by Minho teachers.

In Padua, participants were more prone to consider a lack of encouragement and recognition in their contexts of work, despite having been trained in active learning and occasional implementation. One potential explanation is the fact that the priority at the national level regarding career advancements in academics is still linked to research, and evaluative processes do not take into consideration teaching practices as much as research.

In terms of the perceived lack of relevance attributed to active learning, teachers in Minho are less prone to cite it, followed by Wroclaw professors. The percentages in Padua show that a small, but yet relevant portion of respondents considered that active learning is not relevant. This aspect could deserve further research, although the literature has explored some possible explanations, such as the prevalence given to a traditional culture of teaching and learning and the lack of interest in teaching in general, perceived by many scholars as an imposition when they would rather dedicate their time solely to research.

An open-ended question was added to the questionnaires distributed at Minho and Wroclaw considering aspects that may **facilitate or promote** the adoption of active learning practices and approaches. As stated before, the questionnaire distributed in Padua, although similar in its structure, does not follow the same design and, in this case, this aspect was not included. In the responses given by the participants, there is a common group of comments about "focus on students". In Minho, respondents stated feeling motivated by the positive feedback they receive from students, their "interest", "participation", and "engagement". In Wroclaw, as well, the satisfaction/synergy of class participants was mentioned. In Minho, teachers also stated the need to "reach out

to students" to motivate them, especially to attend classes, by enhancing the quality of interaction in classes. For Wroclaw professors, the curiosity, openness, maturity and motivation of the group is also an aspect that facilitates AL, as well as the need to popularise innovative methods among students. This can be fostered by the openness of the teacher and the ability to build good relations with the group.

There is also an institutional driver in the adoption of active learning methods, which can be embodied in the teaching and learning centres. Wroclaw teachers mention the importance of technical, technological and methodological support. For Minho professors, this can be translated into the availability of specialized literature and educational, as well as training opportunities. Teachers at both universities also value the encouragement from their superiors and the idea that evaluation processes could be more inclusive in terms of considering these teaching practices. The result of integration into a "community of practice" and the possibility to share experiences with peers is also mentioned both in Minho and in Wroclaw. What would also be important to enhance the use of more active learning methods, for the Wroclaw teachers, would be the possibility to enjoy more freedom to determine the form, content and duration of classes and to design original classes. There is another dimension associated with the conditions for the implementation of Active Learning: the class size is highlighted by several teachers (smaller classes would allow more flexibility to introduce active learning); the adequacy of the spaces where classes take place, and the availability of appropriate technology.

The focus on self-motivation is prominent: the idea that, above all, it is the teacher who must self-motivate to go down this path (without relying on external motivation, which may not even exist). In the words of Minho teachers, it is a matter of "personal interest" and "personal gratification" with advantages: greater motivation for teaching and classes, greater ease in imparting knowledge and therefore a feeling of greater "academic freedom". For Wroclaw professors, it is a matter of self-fulfilment and a case of a sense of mission.

Finally, respondents from both universities highlight a motivation factor: the fact that active learning works. In this sense, they mention the "results obtained", and the "efficiency" and "effectiveness" in learning.

## 4 MAPPING – QUALITATIVE SUMMARY

This section is based on a collection of different sources from each of the following institutions: Graz, Leipzig University and University of Vilnius. These institutions reported a general overview of the application of Active Learning Approaches at their institutions allowing the indication of some highlights on the way they have been implementing innovative teaching and learning approaches.

### 4.1 UNIVERSITY OF GRAZ

Innovative and interdisciplinary teaching plays an important role at the University of Graz, as does advising guidance and holistic training of students. The University of Graz recognizes students' responsibility for their learning processes and advocates the principle of co-design and co-determination in the further development of teaching. The Competence Centre for University Teaching (<https://lehrkompetenz.uni-graz.at/en/>) at the University of Graz offers a wide range of information and continuing education courses to foster student-centred teaching and learning, also by didactical training on how to activate students during classes. Also, the Centre for Digital Teaching and Learning of the University of Graz offers teachers services for the pedagogically motivated use of technologies in teaching and learning (<https://digitales-lehren-und-lernen.uni-graz.at/en/>).

In total, the University of Graz enables 17 different types of courses. These types of courses are regulated within the statute of the University and curricula commissions may integrate the different types within study

programmes. The University of Graz offers lectures, seminars, practical training and labs, just to mention a few. Except for “lectures”, all course types require attendance and active participation in general.

In 2022, Birgit Phillips was awarded the very first Arqus Teaching Excellence Award within the category “enabling students” by the Arqus University Alliance. She got this award for the “Bihar Remote Service Learning Project” (<https://arqus-alliance.eu/news/arqus-teaching-excellence-award-winners/>). In this project, students from the University of Graz were required to translate education theory into practical, community-based action that benefits a marginalized community in Eastern India, while enhancing students’ teamwork, communication, digital and reflective skills.

To promote service learning, the University of Graz offers a website with information about this teaching and learning concept and showcases good examples. The University of Graz furthermore provides information about the possibilities and the framework conditions of service-learning. At the Department of Business Education and Development also research projects on service learning have been carried out and led to the conclusion, that service learning has positive effects on the development of student competences. Peter Slepcevic-Zach and Karina Fernandez (University of Graz) have published new results of a study with 82 students on the long-term effects of service-learning. This [research paper](#) on the effectiveness of service-learning is also available in English.

#### “Master’s Plus”. Fostering active learning and future skills within interdisciplinary groups

Since 2022, Master's students can complete compact modules ([Master’s Plus](#)) with a total amount of 24 credit points. They can choose from six socio-politically highly relevant topics: 1. Climate change, 2. Peacebuilding, 3. Digitalization & Data Science, 4. Communication; 5. Entrepreneurship & Intrapreneurship and 6. Media and Public Relations. Within one year, the students develop an interdisciplinary organized peer group with highly relevant skills for the labour market. To meet the different didactical challenges, the module teachers receive didactical support to foster students’ active learning processes. For example, they use different learning formats to teach the skills, in which central future skills are used as a background matrix. In this way, students learn to combine theory and practice in their respective subject areas. The modules have been evaluated since the very first run. A standardized quantitative questionnaire with closed and open questions has been used. The students of each run have received a short questionnaire on their general satisfaction with the respective module, its teaching content and the course dates. At the end of each cycle, a final evaluation takes place, which includes a more detailed assessment of satisfaction regarding the course content, organizational aspects, distribution of the workload and an additional question on skills acquisition. In general, respondents were satisfied with the Master Plus programme. In the current survey, in which 34 out of 73 (response rate: 47 per cent) students from all modules took part. The overall satisfaction rate reached 85 per cent.

## 4.2 LEIPZIG UNIVERSITY

To be able to approach the question of which forms of active learning are used by lecturers at UL, it is important to distinguish what can be understood by active learning. Active learning is a somewhat generalised term used to describe the approach whereby lecturers do not impart learning content to their students theoretically. Instead, students have to become active themselves to acquire knowledge and develop competencies (e.g. through discussions, problem-solving, practical exercises, self-reflection, and feedback). The Leipzig University mission statement states the “[Interdisciplinary principles of good teaching](#)” in the following ways:

- Teaching should not be primarily guided by content but rather by the learners and the learning processes;

- Teaching should be driven by the competences to be acquired;
- Intrinsic motivation should be promoted;
- Students should be seen as partners in the academic learning process;
- Academic, practical, and reflexive learning should be combined;
- Opportunities for active and cooperative learning should be offered; and
- Space should be provided for autonomous, self-organized, and self-directed learning.

Accordingly, good teaching presupposes that:

- The design of a degree programme is well-founded;
- The design and implementation are transparent;
- The general conditions are appropriate;
- Material and personnel resources as well as suitable classrooms are available;
- Faculty-specific principles for quality development are established that are based on the
- Standards set by the Senate and are compatible with the current system of quality assurance;
- Quality cycles that are subject to regular internal and external review are functioning and
- Qualified personnel who participate in continuing education programs for their subject and teaching are employed.

There are 24 different types of courses at the University of Leipzig (UL), including small-group seminars, internships, project seminars and lectures with integrated exercises. In recent years, the percentage of types of courses related to interactive activities was always above 80% of the courses.

#### **Teaching Survey | Leipzig University in 2020/21**

During the pandemic, an initial lecturer survey was conducted in the winter semester of 2020/21 with a focus on digital teaching with an overall of 662 respondents. In a part of the questionnaire answered by approximately 60 teachers, more than 60% reported that they would like to promote more self-directed learning among students and encourage collaborative working among students, selecting the following two items:

- I would like to strengthen independent learning (self-directed learning).
- I would like to enable more collaboration among students (collaborative).

The same survey analysed which support services the lecturers would like to have (n=662). In this case, technical support services in particular (45,9%) but also didactic training programmes (34,3%), as well as a temporary reduction in the teaching load for the design and development of digital teaching and learning scenarios (33,7%) were seen as helpful.

#### **Teaching Survey in 2023/24 | Project D2C2**

Another survey applied in 2023/24 was based on the recommendations of the German Council of Science and Humanities on the sustainable (digital) organisation of studying and teaching. After the pandemic years, these contain empirically based structural recommendations for the upcoming changes at universities in the digital age. With the help of the survey, the aim is to ascertain the attitudes of teaching staff towards the recommendations of the German Council of Science and Humanities to derive options based on these to provide appropriate support for teaching staff and universities on their path to the future. Figure 5 shows answers focussing on the use of digital methods/tools by lecturers to actively shape teaching predominately focusing on Learning Management Systems (86,5%) and Video Conferencing Systems (77,9%).



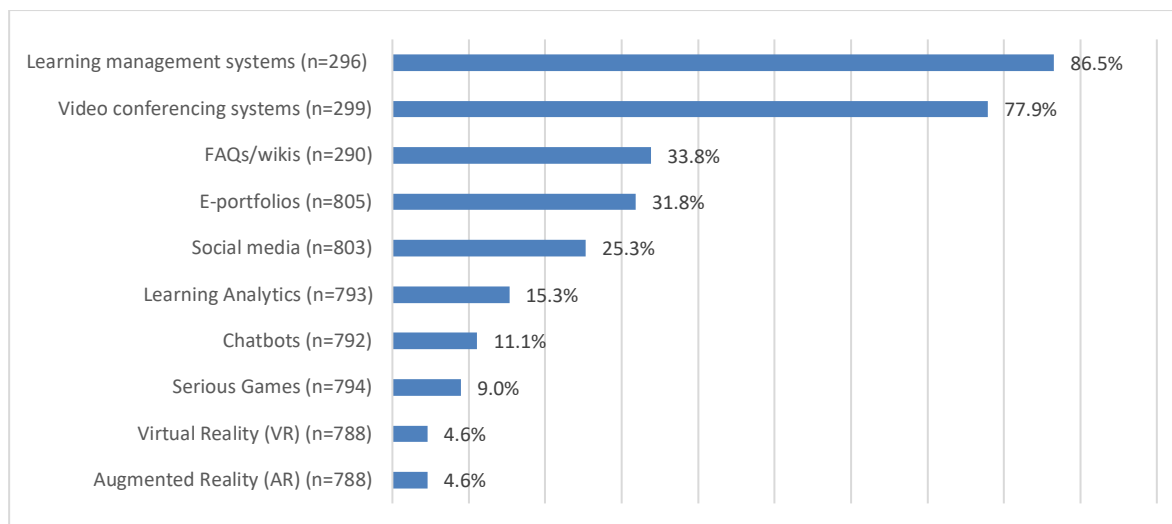


Figure 5. The use of digital methods/tools by lecturers at the University of Leipzig

In order to support teachers in expanding their repertoire of methods so that they can in turn support active learning in their students, there are numerous further education formats at Leipzig University.

The Leipzig University [office for quality management in teaching and studies](#) (StQE) supports lecturers' event-related, e.g. often entire degree programmes are affected by change processes. For example, when a team of lecturers in a bachelor's degree programme decides to focus more on research-based or problem-based teaching. In this case, the degree programme and StQE work together to develop tailored continuing education formats that will provide optimal support for their teaching staff. Degree programmes are by nature subject to continuous further development. New research methods and findings, social debates and dynamics, the (heterogeneous) educational interests of students and employers' expectations regarding the qualifications of graduates all provide innovative ideas that can then be directly and indirectly incorporated into the further development of degree programmes. The StQE can provide support through its established planning framework and by structuring the process in a project-based manner.

Lecturers at Leipzig University can access continuing education programmes on various topics related to teaching and learning free of charge on the continuing education database ([Fortbildungsdatenbank](#)) and through the [Teaching and Learning in Higher Education Saxony \(Hochschuldidaktik Sachsen\)](#).

In 2022, 28 lecturers from UL took part in the basic module (60 AE) of the Teaching and Learning Higher Education Saxony certificate programme (1.680 AE, which corresponds to 210 training days). The open course programme (individual participation, 01.09. – 31.12.2022) amounted to 626 AE participation, which corresponds to 78.25 training days. The participations are not equal to participants (e.g. 1 person may have taken part in 3 courses of 8 AE each, that would be one participant, but 24 AE or 3 training days).

In 2023, 19 lecturers from UL took part in the basic module (1.140 AE, which corresponds to 142,5 training days). The open course programme (individual participation: 01.01. – 31.12.2023) amounted to 1.777 AE participation, which corresponds to 222,13 training days. Furthermore, in the specialization module (80AE) 10 lecturers participated.

The project "Digital Higher Education Saxony" is realising digital workspaces for lecturers (<https://www.urz.uni-leipzig.de/ueber-uns/veranstaltungen/werkstatt>). In 2022/23, 87 Lecturers from UL participated in 7 workspaces to work on their own teaching concepts in a productive and concentrated setting.

#### 4.3 UNIVERSITY OF LYON 1

This section presents a summary of the information related to teaching innovation gathered by the Working Group 05 Lyon 1 team. Students have access to the latest generation teaching facilities: cutting-edge technical platforms, 3D simulation, simulation on life-like models, drones, MOOCs, etc. The Teaching Innovation at Lyon 1 benefits in particular from the work of ICAP, a joint support service for teaching teams to help improve the quality of teaching and student success. ICAP objectives are:

- Innovate, advise and experiment in pedagogy;
- Design suitable educational systems and digital infrastructures;
- Support and train teachers in pedagogy and digital environments dedicated to learning; - Evaluate teaching methods and learning experiences.

The local WG5 team and ICAP organized in June 2023 the first workshop on educational innovation (50 participants in 2 days) to highlight the main achievements of the Lyon 1 teaching community concerning teaching innovation, some are supported by ICAP, the themes that were developed are:

- How 3D helps learning, from mental imagery to perception in space, from scripted 3D video to real-time 3D with examples concerning teaching through images in sports, health and dentistry.
- Educational video, whether produced by image professionals or by students involved in their project, inclusive, in the form of a report or interview, to show an experimental procedure or in 360 immersion, remains an essential learning medium.
- The place of immersion learning and more particularly virtual reality in science and medicine teaching, collaborative, scripted, from gesture practice to revision support.
- Integrating innovative tools and teaching using gamification, the magic potion of the escape game or board game, to make these new modalities a level in students' learning.

The first edition of the Lyon Teaching Awards further strengthened the efforts of the community. An educational innovation award ceremony will be organized in June 2024 during the second Lyon 1 workshop on educational innovation. We will have the pleasure of rewarding six winners who proposed high-quality achievements.

#### 4.4 VILNIUS UNIVERSITY

Innovative interdisciplinary research-based teaching and active learning are at the heart of Vilnius University's Education strategy. The competencies necessary for creating active learning environments are officially approved as obligatory pedagogical competencies ([University Pedagogical Framework](#)) for all Vilnius University teachers and are evaluated during the academic staff recruitment and certification processes.

The development of the pedagogical competencies of the University's academic staff follows a clear framework: competence assessment, training, feedback and support for educational initiatives. Training programmes are organized and delivered, first of all, referring to and following the officially approved University Pedagogical Framework (obligatory pedagogical competencies for all University teachers mentioned above). The trainings are supplemented by a mentorship programme "Teachers for Teachers" and various communities of practice which allow VU teachers to meet and share experiences outside the training classroom as well.

Innovative teaching and active learning are also promoted by financing the projects of educational innovations directly related to the implementation of innovative teaching and active learning methods and formats into the educational processes. The Educational Initiatives Support Fund was established in the spring of 2021 to

encourage teachers to use active teaching and learning methods and to conduct research into the use of these methods to improve the student learning experience. Since then, 263 320 Euros have been allocated for the implementation of 55 teaching innovation projects.

In addition, at the end of 2022, a new award system for academic staff for their contribution to education quality improvement was introduced. The criteria for the awards are closely linked to the above-mentioned University Pedagogical Framework. Since then, the usage of active teaching and learning methods and the development of digital interactive learning materials have been among the officially approved criteria used for financial awards for academic staff at all University faculties.

**The ideal university teacher/professor.** In 2021/2022 as part of the international Erasmus+ project “QUALITI – Didactic QUALity Assessment for Innovation of Teaching and Learning Improvement”, the survey of Lithuanian university teachers’ perception of “an ideal university professor” was carried out. Vilnius University teachers composed the majority (88 %) of the survey respondents.

Table 3 show a series of proposed statements referring to the "ideal professor/teacher". When answering the questionnaire, the teachers were asked to indicate the level of importance of each statement.

Lithuanian teachers mostly emphasize the importance of the teacher’s general responsibility for the teaching-learning process, the relationship with students and among students, and emotional satisfaction.

- *Taking into account difficulties students have in your subject*
- *Creating a positive relationship with students*
- *Promoting participation in the classroom*
- *Feeling responsible for teaching-learning processes*
- *Feeling satisfied with the teaching activities carried out*
- *Adopting a reflective and critical attitude toward teaching.*

However, the teachers found the following practical skills which are directly related to the development of a successful active learning environment as slightly less important:

- *Creating diagnostic tools to measure entry-level knowledge and skills in order to plan and individuate the most appropriate teaching methodologies and strategies for teaching and training*
- *Using formative assessment to monitor student learning and to better provide feedback and respond to student needs, also providing changes in teaching practices where necessary*
- *Making up well-structured progress tests for continuous assessment in order to monitor student learning and make changes in teaching practices where necessary*
- *Using new technology to facilitate learning*
- *Promoting innovative teaching methodologies*
- *Promoting innovative assessment methods*
- *Collaborating with other members of the teaching staff to promote and enhance the quality of teaching.*

Table 3. Ideal professor/teacher perception from Vilnius University

Items	not at all important	not very important	important	very important
11. Taking into account difficulties students have in your subject	0%	2%	42%	56%
12. Taking into account student needs	0%	5%	46%	49%
13. Creating a positive relationship with students	0%	2%	35%	63%
14. Encouraging dialogue among students	1%	7%	41%	51%
15. Promoting participation in the classroom	0%	2%	37%	62%
16. Valuing student experience and taking these experiences into account for lesson and activity planning	1%	9%	55%	34%
17. Feeling satisfied with the teaching activities carried out	0%	3%	22%	74%
18. Putting effort into teaching activities carried out	0%	0%	18%	82%
19. Feeling responsible for teaching-learning processes	0%	3%	42%	55%
20. Adopting a reflective and critical attitude toward teaching	0%	2%	37%	61%
21. Creating diagnostic tools to measure entry-level knowledge and skills in order to plan and individualize the most appropriate teaching methodologies and strategies for teaching and training	1%	14%	53%	31%
22. Using assessment strategies during the course to support learning outcomes	1%	9%	45%	45%
23. Using formative assessment to monitor student learning and to better provide feedback and respond to student needs, also providing changes in teaching practices where necessary	3%	12%	47%	38%
24. Making up well-structured progress tests for continuous assessment in order to monitor student learning and make changes in teaching practices where necessary	3%	10%	50%	37%
25. Employing teaching diverse teaching resources and materials to facilitate learning	1%	6%	46%	46%
26. Using new technology to facilitate learning	4%	13%	50%	33%
27. Planning teaching activities to be carried out and following the plan rigorously to enhance learning processes.	0%	9%	60%	31%
28. Carrying out supplementary activities (seminars, conferences etc..) to improve the quality of teaching	6%	26%	51%	17%
29. Guaranteeing students a high level of autonomy in learning	0%	7%	57%	36%
30. Fostering student participation within the classroom	0%	3%	37%	61%
31. Presenting the course objectives clearly to students	0%	1%	41%	58%
32. Involving students in teaching activities and in the teaching-learning process	0%	7%	41%	53%
33. Planning interesting and engaging lessons/lectures for students	0%	3%	36%	61%
34. Planning learning activities that appeal to students	0%	9%	58%	33%
35. Encouraging students to use resources and bibliographical documents to enhance learning	2%	14%	54%	30%
36. Encouraging students to use additional resources in addition to those required	2%	17%	57%	24%
37. Promoting clear and transparent assessment practices	0%	2%	23%	75%
38. Making assessment criteria public so that all students are aware of them	1%	3%	25%	72%
39. Following the assessment procedures and exam structure indicated in the course syllabus	1%	3%	30%	66%
40. Promoting innovative teaching methodologies	3%	12%	57%	29%
41. Promoting innovative assessment methods	3%	24%	54%	18%
42. Providing individual and group positive feedback to support student progress	1%	6%	49%	45%
43. Collaborating with other members of teaching staff to promote and enhance the quality of teaching	1%	10%	54%	34%
44. Being appreciated by fellow professors thus helping to motivate your professional growth	8%	33%	46%	13%
45. Being appreciated by your University or other institutions, thus motivating and encouraging your professional growth	9%	35%	44%	12%
46. Being appreciated by the scientific community (in terms of published works, and conference participation), thus motivating and encouraging your professional growth	5%	14%	56%	25%
47. Serving as a model of ethical and professional action	3%	6%	42%	50%

## 5 CONCLUSION

Active learning is, at this present moment, at the centre of many policy recommendations in the higher education field. Preparing students for the new challenges that await them in their professional, social and personal future is increasingly a complex task that demands new approaches in classrooms and the continuous development of competencies not regularly addressed by traditional teaching methods.

This complex environment is not unknown to the universities that are members of the Arqus Alliance, and this first mapping exercise demonstrates the commitment of all institutions in approaching these new challenges. Both the qualitative and the quantitative mapping highlight the role of internal policies or institutional units that support pedagogical innovation. In their responses to the surveys administered (in Minho, Padova and Wroclaw), teachers value the role of teaching and learning centres in supporting their mission. Qualitative assessments of the other universities also show how they are committed and working to make active learning more adopted in classrooms.

The results of this mapping exercise show that active learning practices and approaches are already being used regularly by a significant number of teachers. Methods most used may vary from institution to institution, but there is evidence that a variety of strategies is deployed to make teaching and learning more interactive, participative, and reflexive.

Assessment has also evolved to include more possibilities other than exams or tests so that students can also be assessed in terms of competencies and not only memorized content. The experience of the **University of Vilnius** gathered from the implementation of a project aimed at defining the characteristics of an ideal academic teacher indicates that the following descriptions are considered important or very important: using assessment strategies during the course to support learning outcomes, using formative assessment to monitor student learning and to better provide feedback and respond to student needs, also providing changes in teaching practices where necessary and promoting clear and transparent assessment practices. However, respondents found the following practical skills, directly linked to the cultivation of a successful active learning environment, to be slightly less important: making up well-structured progress tests for continuous assessment in order to monitor student learning and make changes in teaching practices where necessary and promoting innovative assessment methods.

Issues about assessment were frequently highlighted by survey participants at all analysed institutions as subjects of training courses, along with sharing examples of best practices. However, there exists a distinct need for training and courses aimed at enhancing competencies associated with utilizing assessment as a pivotal component of active teaching and learning.

Results from all Arqus Consortium partners allow posing hypotheses about potential relations between the way teaching is implemented and the learning outcomes achieved by students and their assessment of the learning process. Moreover, some simulative methods such as portfolio, role-playing, content creation through the adoption of technologies, and formative assessment demand further attention.

Hence, despite the prevalence of rather traditional methods and tools as the primary evaluation procedures employed, it's crucial to underscore the significant diversity of evaluation practices. This diversity, whether used more or less frequently, underscores university teachers' openness to adopting new methodologies for assessing students.

There is still a long way to make active learning the first response in all institutions. Even though professors in all institutions have been adopting active learning methods, there is a significant part that still relies on non-participated lectures and other more traditional strategies, which are not student-centred approaches. Also, the surveys show that some teachers still find active learning not relevant to their classes. Thus, there is still room to

improve knowledge within the academic community about the advantages of using evidence-based instructional approaches. Also, the report highlights some alternatives that could help to promote active learning, such as managing the workload, organising smaller teaching groups, providing more training, ensuring evaluation processes that value more pedagogical practices and making a clear institutional commitment to active learning through a clearer recognition of the work done at this level.

This first mapping exercise may not provide unexpected results, but is, nonetheless, a very important contribution to the mission of the Alliance. Firstly, it contributes to a more systematic knowledge of the adoption of active learning methods within its members, which will allow for a longitudinal analysis of the implementation of more interactive and participative teaching methods. Secondly, it sheds light on what institutions can provide to support their teachers in the promotion of teaching approaches more aligned with the current needs of the professional and social world.

The fact that there are similar experiences and difficulties reported by teachers from different universities is also a reason that highlights the importance of the Alliance in addressing this topic, as it is being currently carried out by WP5. Joint and combined efforts can optimize resources, allow for the sharing of best practices and create synergies among teaching supporting units. This report is a valuable contribution to achieving such goals.

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