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The State of Hybrid Learning in Higher Education

How can higher education institutions harness the power of online learning?

In the last couple of years, the process of digitization has accelerated. Fueled with a pandemic that stopped our usual ways, one thing became clear:

The future of education is digital.

That doesn't mean that students will necessarily stop physically going to schools and colleges. However, it means that **universities need to offer digital or hybrid learning models to students at an increased pace.**

The benefits of distance learning are immense. Digital education allows students and teachers to explore new methods of teaching and learning, producing a better understanding of subjects and improved learning outcomes. It all results in **students being adequately equipped to work in an increasingly digital world.**

As promising as this sounds, **universities still face major challenges in implementing digital education best practices.** The lack of funding and the complex IT infrastructure makes it more difficult for higher education institutions to adapt to the newest digital technologies in comparison to businesses whose livelihoods often depend on it. However, one thing is certain: distance learning is here to stay - due to its many advantages over traditional ways of studying.

The importance of digital transformation in education and distance learning:

There are many benefits to distance learning for all the parties involved: students, teachers, universities, and future employers. However, **digital education is also a greener alternative to traditional teaching ways:** providing digital learning courses consumes 90% less energy and produces 85% fewer CO2 emissions per person than face-to-face training.[1]
Here is how digital transformation is positively impacting the education sector.

The power of collaboration

In the sphere of education, going digital means enriching the way students learn and teachers teach. This enables a more thorough transfer of knowledge at a personalized pace.
When learning is digitized, teachers can apply more than one teaching method. **They are not limited to lecturing only but can use different resources like videos, images, and audio content.**
Most importantly, both teachers and students have access to a lot of information about the educational process at all times. Not only can students more easily track their progress, but they can also chat with other students and find out the information they need right away.

It is no wonder that 43% of US college students found digital study technologies extremely helpful for doing homework[2], and that **84% of students believe that digital learning technology can improve their education.[3]**

Making education more accessible and safe

In 2020, 41% of college students said that their online learning experience was far superior to physical classroom learning.[4] **2020 was a challenging year, and universities prioritized their students' and faculty's safety.** We now see that the digital learning experience was perceived superior to physical by some, even when it was implemented so abruptly and without proper preparation.

Not only does distance learning enable students and teachers to stay safe, it is more accessible. For one, it allows students with disabilities to participate in educational activities more easily. Secondly, everybody **has the flexibility to access studying materials at any time - making it extremely convenient to study at your own pace** and at your own time.

No wonder that 82% of students say digital learning technology allows them to spend more time studying through increased accessibility.[5]

Preparing students for the jobs of the future

[6] https://www.mheducation.com/news-media/press-releases/2016-workforce-readiness-survey.html

85% of college students feel having used tech in classes or to study has helped to make them a better job candidate.[6] This is no wonder, since digital skills are sought after in the job market like never before.
When participating in distance learning, students are acquiring digital skills by using technologies at hand. These technologies are often mimicking the ones they will use in the business world.
Moreover, **students are acquiring a better understanding of their own schedule and responsibilities when immersed in online learning.** This can help many students to prepare for their future remote and hybrid jobs that also require a lot of independent work.

Universities becoming more competitive

Digital transformation in education does not only benefit students, teachers, and future employers. It also has many advantages for universities offering it.
For example, universities that incorporate distance learning best practices can hire lecturers from all over the world, similar to remote companies that hire talent from anywhere.
It gives universities the opportunity to offer high-quality education, which can attract more students. Being more competitive can also bring more funding, thus directly profiting universities that successfully implement digital transformation initiatives and enable distance learning.

Enabling distance learning: challenges and opportunities

Enabling distance learning benefits universities. However, higher education institutions face several obstacles when implementing digital transformation initiatives in their rows.
Here are the most prominent challenges universities face when implementing online learning - and our tips on approaching them.

Challenge #1: Adapting to new technologies

The challenge of adapting to new technologies has two aspects. First and foremost, it refers to **universities' complex IT infrastructure that makes it difficult to quickly and efficiently introduce new solutions.** Moreover, software customization is often costly and can strain universities' tight budgets.
That's why many higher education institutions are turning to open-source software. Not only is it flexible and easier to fit in an existing IT environment, open-source solutions often come with a lighter price tag. **The open-source nature of these solutions enables higher education institutions to change it to fit their needs without vendor lock-in.**
The second part of the challenge of adapting to new technologies refers to the people. Namely, 41% of US teachers say lack of training is the biggest obstacle to increasing the use of educational tech in their classrooms.[7]
Moreover, 70% of public sector employees believe their digital skills are poorer than those of private-sector employees.[8]
The solution? Invest in training. Students will more easily adapt to digital technologies, having grown up surrounded by them. However, that's not the case for **faculty and staff who need additional training to achieve satisfactory digital fluency levels.**

Challenge #2: Maintaining data privacy and sovereignty

[7] http://www.theeducators.co/2020/06/30/e-learning-statistics/

[8] https://magenest.com/en/digital-transformation-in-education/

[9] https://www.gartner.com/en/newsroom/press-releases/2020-09-14-gartner-says-by-2023--65--of-the-world-s-population-w

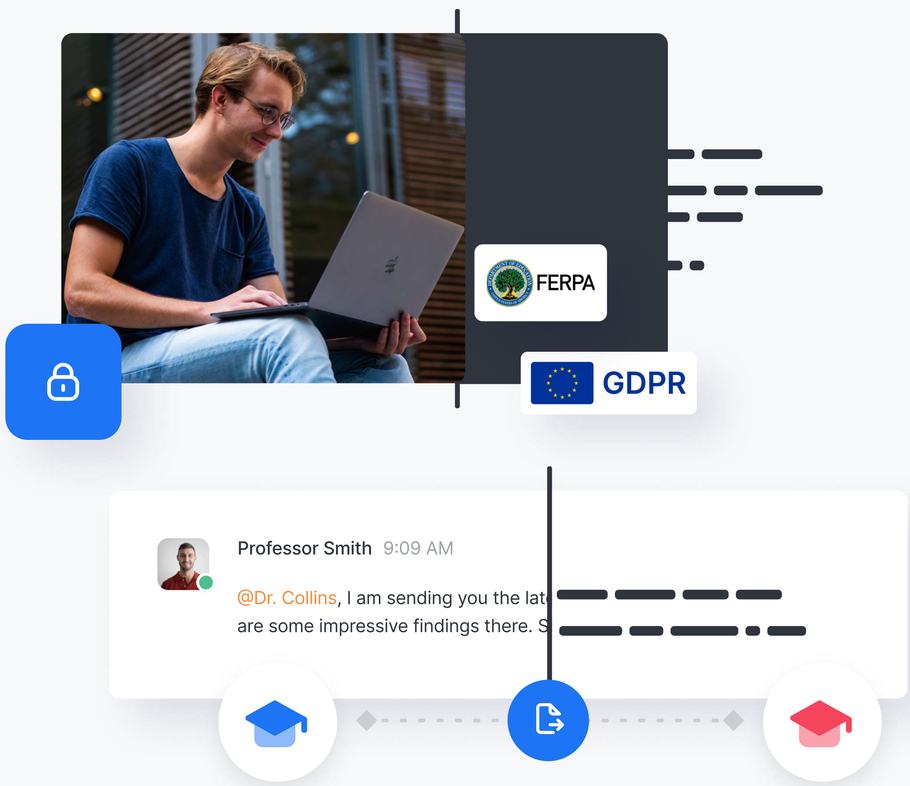
[10] https://www.tessian.com/blog/biggest-gdpr-fines-2020/

Data privacy regulations are becoming stronger and are being implemented all over the world. Gartner's research shows that by the end of 2023, 65% of the world's population will have its personal data covered under privacy regulations.[9] **GDPR in Europe is a prime example of how laws and regulations impact the use of certain solutions.** The financial repercussions for disregarding compliance are telling: there were €158 million worth of GDPR fines issued in 2020 only.[10] That's why universities need to be mindful of protecting their data privacy. They can do so by:

- **Introducing or expanding the role of Data Protection Officer**
- **Providing data privacy training to staff and faculty**
- **Acquiring data privacy-mindful solutions (for example, GDPR-compliant).**

More and more organizations are opting for full data sovereignty to ensure highest data security standards. Data sovereignty means authority, maintenance, and control of data within jurisdictional boundaries - in other words, having full control over your data. **On-premise software deployment is a way to achieve full data sovereignty**, so many privacy-conscious organizations opt for such solutions.

Challenge #3: Cybersecurity



Research shows that universities underinvest in their cybersecurity. Yes, higher education institutions don't have infinite resources, and cybersecurity breaches don't happen to everyone.
However, when data security breaches do happen, they are very costly, and cyberattacks are rising. More specifically, we saw increased cyberattacks against universities since the abrupt switch to online learning in 2020. The average cost of a cyberattack against universities was $477,000.[11]

Moreover, universities often collaborate with external parties like other higher education institutions or companies. The major challenge they face while doing joint research is protecting collaborative data.
This challenge might be the hardest one to solve for universities since it requires a comprehensive strategy on data security.
Apart from investing resources to increase their network security, universities must look for security-oriented solutions. These are some of the features to be mindful of:

- **On-premise deployment: on-prem allows universities to have control over their data, thus protecting them better. 65% of companies that opt for on-prem solutions do so to better protect their data.[12]**
- Make the software user-friendly: Although it's not a security feature, user friendliness ensures that students and teachers will not resort to other consumer-based software that might not be as secure.
- Multi-factor authentication: using mobile apps, email, and text messaging helps to fight the misuse of software at hand.
- Open-source software: the source code transparency allows contributors to make security-oriented changes and leads to regular security updates.

When it comes to protecting collaborative data between different universities or universities and businesses, best practices call for intense regulation of data sharing via contracts that specify security policies, data protection responsibilities, technology to be used, and more.
A feature to look at when researching security-oriented collaboration platforms is federation. Federation allows servers to communicate with each other, with no limits to the number of servers connected. This means that users can exchange information and communicate under an umbrella of security practices that have been set up on these servers.

Challenge #4: Resources to acquire and maintain new digital tools

Universities are often underfunded and lack resources to acquire and maintain new digital tools. Luckily, more and more governing bodies understand the need for digital transformation in the education sector.
For example, the EU has issued a Digital Education Action Plan (2021-2027)[13] that includes the "support for the digitalization of teaching methods and pedagogies and the provision of infrastructure required for inclusive and resilient remote learning".
Moreover, **Germany's Digital Education Strategy 2025 includes €6.5 billion[14] in funds that schools and universities can use to invest in improving digital education.** This includes acquiring new technologies, improving data security, hiring new personnel who will aid with the digital transformation process, and so on.
Since the EU issued an industry-wide action plan, we can expect more countries to recognize the benefits of distance learning for their own economies and provide funds accordingly.

[11] https://edscoop.com/bluevoyant-university-cyberattacks-ransomware-report/

[12] https://f.hubspotusercontent10.net/hubfs/8554162/The_State_of_On-Prem_Whitepaper.pdf

[13] https://education.ec.europa.eu/focus-topics/digital/education-action-plan

[14] https://www.handelsblatt.com/politik/deutschland/digitalisierung-der-schulen-neue-zahlen-zum-digitalpakt-von-6-5-milliarden-euro-ist-erst-ein-achtel-abgeflossen/27567074.html?ticket=ST-1835093-udqG5ydARcLCQFEvm5yy-ap6

Challenge #5: Student disengagement

When universities and students abruptly switched to online learning in 2020, it created a number of challenges. One of them was a **drop in student engagement.**
For one, students didn't know how to use the technologies at hand. Secondly, the online environment takes away from social, non-verbal clues that are present in a traditional classroom.
To deal with these issues, researchers from LSE propose the following:[15]

- **Creation of tutorial videos for online platform and tools**
- **Structuring formal and informal learning and use of VR and other immersive technologies**
- **Breaking the dichotomy between social and classroom learning using collaborative online tools.**

Collaborative tools such as instant messaging solutions allow students to more easily engage in conversations with each other as well as with their teachers. That's why universities must be mindful to provide easy-to-use communication tools that will help to bridge the gap between online and traditional classrooms.

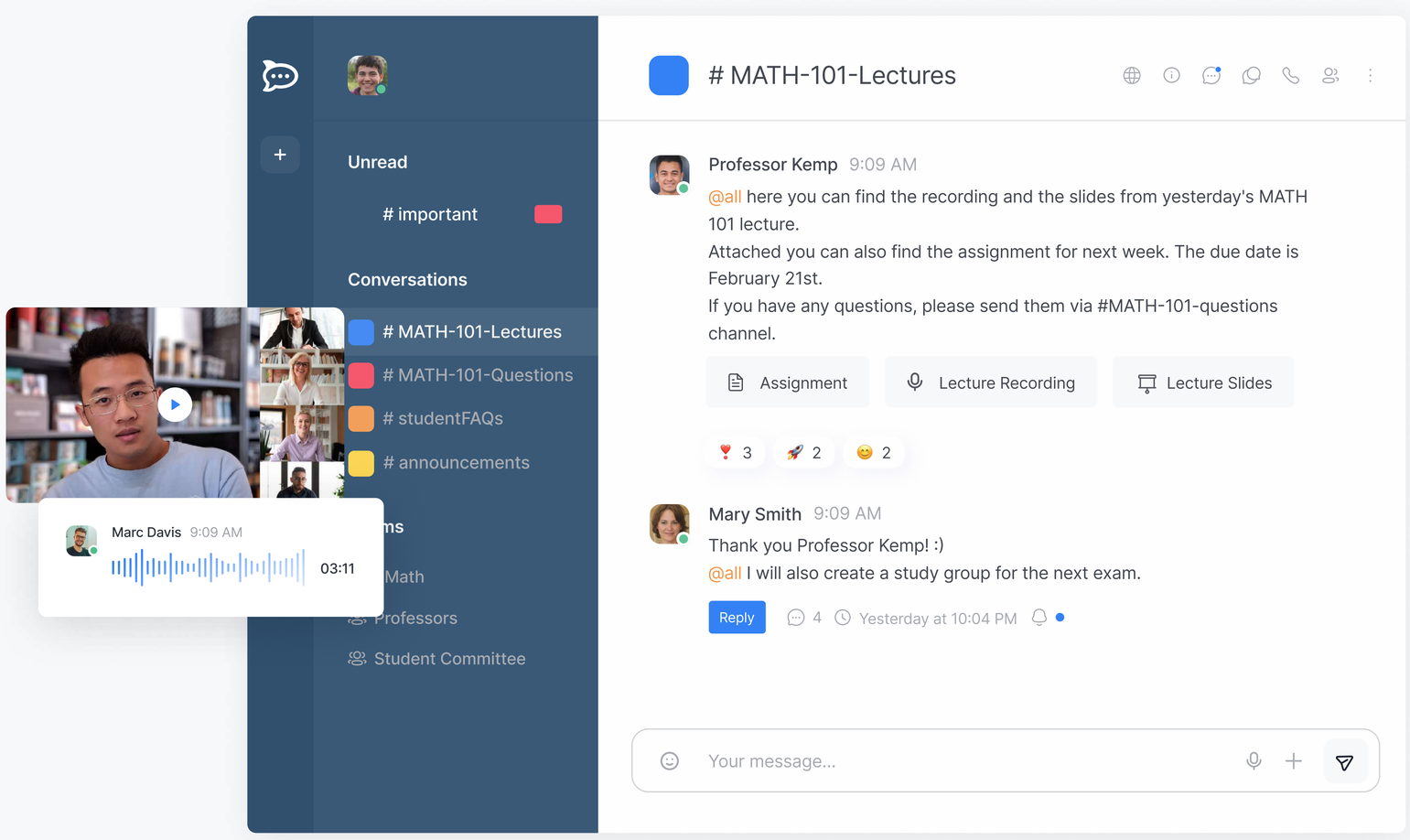
[15] https://www.lse.ac.uk/PBS/assets/documents/PEL-coursework/Student-Engagement-in-Digital-Education-PEL-coursework-2020-2021.pdf

Challenge #6: IT challenges

[16] https://er.educause.edu/

[17] https://er.educause.edu/articles/2021/11/top-10-it-issues-2022-the-higher-education-we-deserve

EDUCAUSE[16] is a nonprofit association whose mission is to advance higher education through the use of information technology. They have singled out top IT issues in higher education for 2022.[17] Some of their recommendations are related to cybersecurity and refer to **developing processes and controls, institutional infrastructure, and institutional workforce skills to protect and secure data.**
Other challenges include accelerating digital transformation to improve operational efficiency, providing more student-centric and equity minded tech systems, and achieving full, equitable digital access for students by investing in connectivity, tools, and skills.
What this all tells us is that **IT should be taking a strategic role in driving digital transformation** - another important change to enable digital education best practices.



The role of open-source technology in eliminating hybrid learning challenges

Open-source technology has proven to be an excellent solution to many challenges that universities experience when introducing hybrid learning models. **The flexibility of open-source solutions makes them fit in higher education institutions' complex IT infrastructure.**
At the same time, open-source solutions offer their users strong data security and privacy features. It is a **unique combination of flexibility and security that enables universities to offer a great digital learning experience to students.**

Here are some of the most popular open-source solutions used in education and the publicand public sector, according to Swedish government agencies that issued a report on them.[18]

Chatrooms	Element Rocket.Chat Mattermost
Video conferencing	Jitsi Pexip Cisco meetings Streaming
Kanban	Nextcloud Stackfield Jira
Whiteboard	Collaboard Nuiteq Stage Bluescape iObeya

[18] https://www.esamverka.se/download/18.4a6f5f6917d9204856518c5e/1639137082930/Digital%20collaboration%20platform%20for%20the%20public%20sector.pdf

How Rocket.Chat improves digital learning and teaching for universities across the world

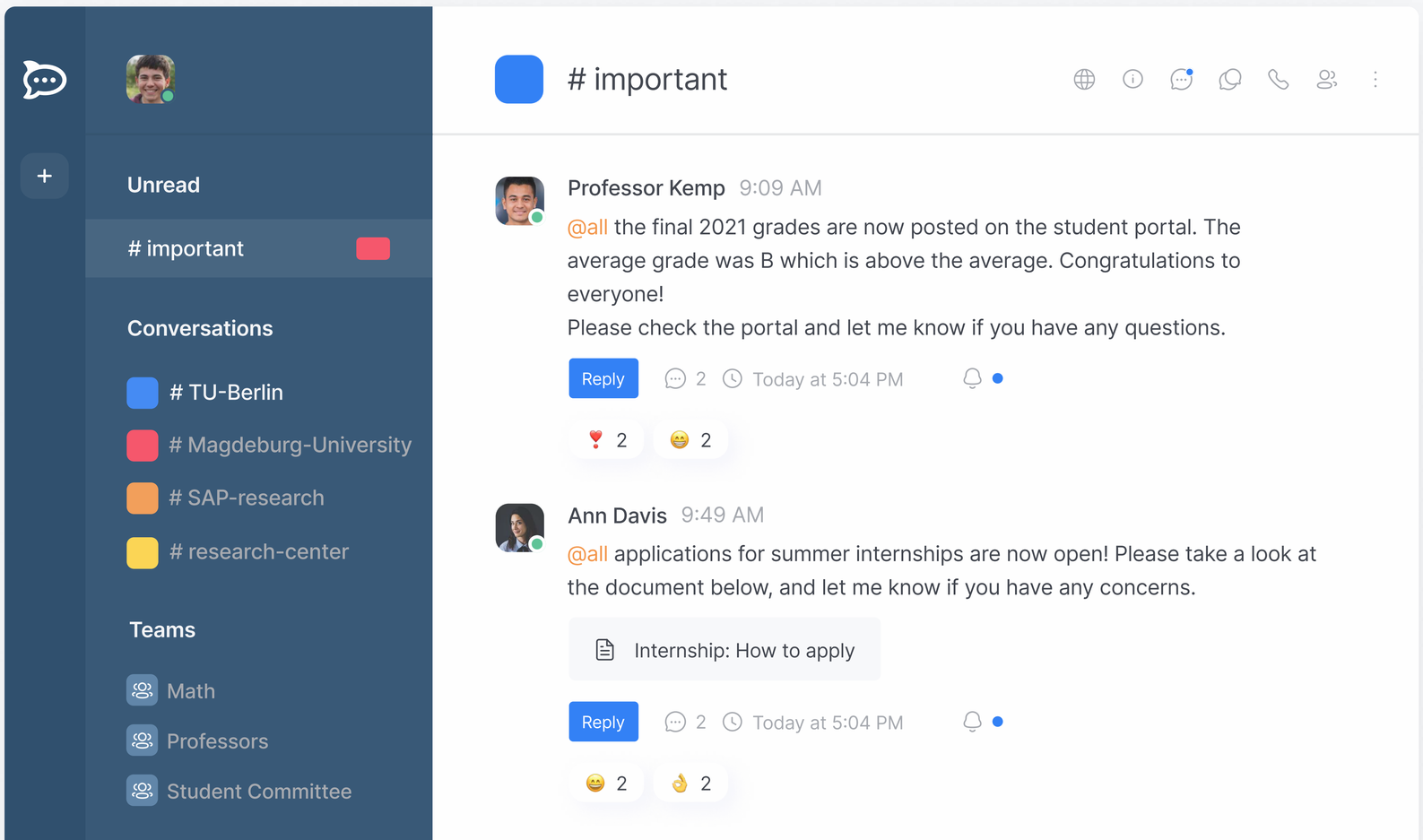
Rocket.Chat is a collaboration platform that provides secure hybrid and remote learning environments for higher education institutions, their partners, and other organizations.
It enables internal and external collaboration in higher education by:

Ensuring seamless student-teacher experience

Teachers and students can set up various teams, channels, and discussions to communicate synchronously and asynchronously, boosting engagement and the learning experience.

Improving student experience

Empower students to ask questions and stay informed with class- or project-based channels. Keep the conversation going with the virtual lectures and online office hours.



Connecting with other universities, companies, and other external entities

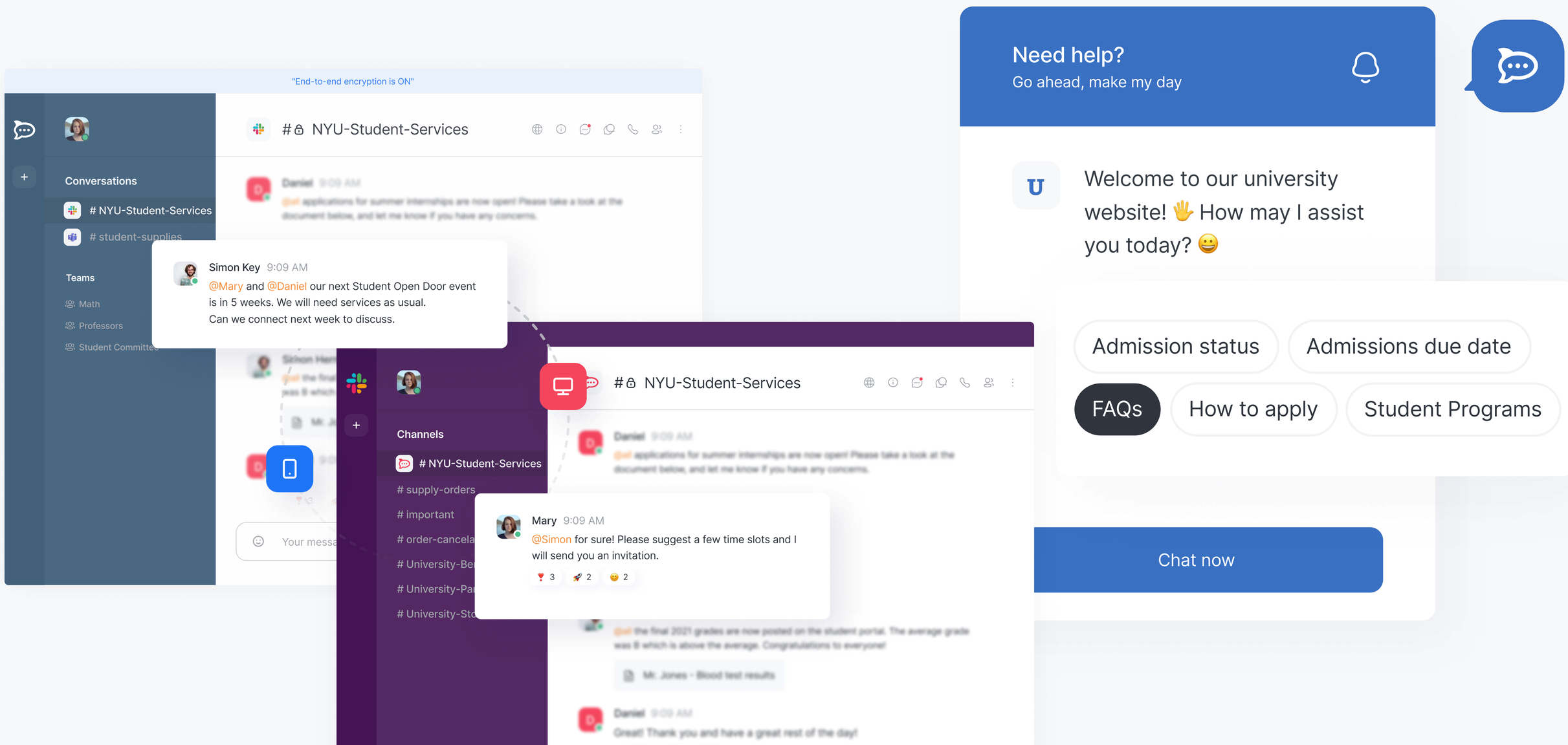
Invite external members to collaborate on specific projects while keeping collaborative data protected. Collaborate across departments and with other universities and companies.

Communicating across other platforms

Even if organizations and other universities you work with use different communication solutions such as Slack, MS Teams, and email, you never have to leave Rocket.Chat to connect with them.

Connecting with future students and driving more admissions

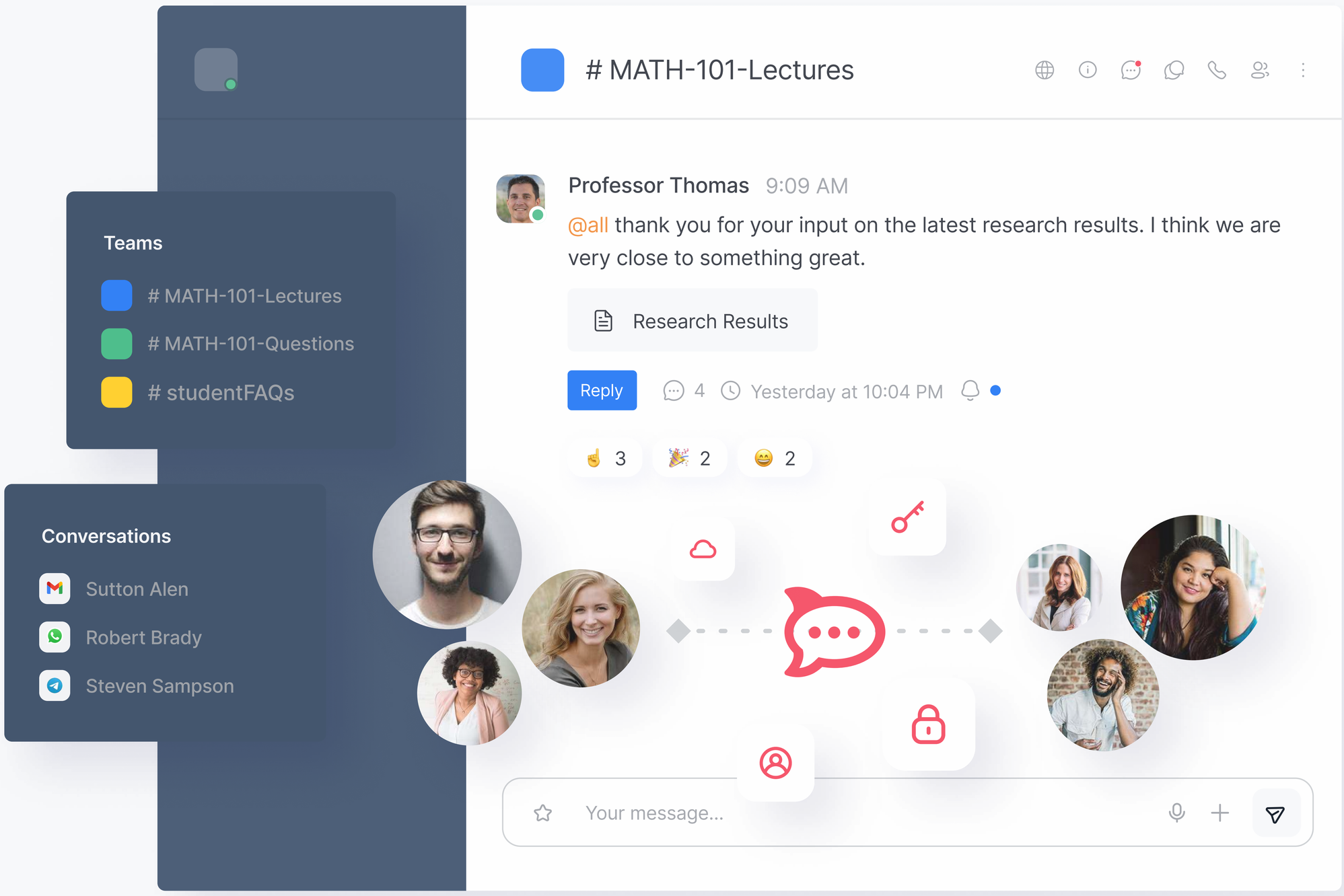
Leverage Rocket.Chat's live chat on your website to answer student questions, provide useful information, and drive more new admissions.



Rocket.Chat features ensure secure campus communication for more than 700 universities all over the world:

- Open-source technology
- GDPR, FERPA, and HIPAA compliance
- Federation
- On-premise deployment
- End-to-end encryption
- LDAP/Active Directory integration
- Microservices infrastructure (high scalability and availability).

Talk to sales | Find out more



Why do privacy-conscious universities choose Rocket.Chat?

Rocket.Chat is a solution we can completely rely on

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It's compatible with our infrastructure and meets our legal and security standards. Therefore, I would strongly recommend other educational institutions to use it. Rocket.Chat also enables us to provide university staff with a better work-from-home experience. It is essential for daily employee communication, social contacts, and the management of support requests.

Patrick Holz
Head of Customer & Web Support department,
University of Cologne

Rocket.Chat makes team collaboration easier on a daily basis

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Rocket.Chat replaced email communication in several circumstances. We also connected it with bots to send important system notifications out-of-band. We looked at various options, but Rocket.Chat matched all of our criteria. Rocket.Chat has proven to be quite adaptable when it comes to finding the best answer to an issue. It was very simple to integrate and set up as a platform.

Thomas Nau
Deputy Director Communication and Information
Centre (kiz) at Universitaet Ulm