"Fostering Socially Distanced and Inclusive on Campus Education in Armenian HEIs"

BRUSOV STATE UNIVERSITY (BSU)

NEEDS ANALYSIS REPORT

Results of the Surveys on Teaching Staff Digital Competence Needs Assessment and Students Digital Learning Needs Assessment

YEREVAN 2025

Content

Introduction

This report presents the results of the surveys conducted at Brusov State University (BSU) within the framework of the Erasmus+ CBHE project "Fostering Socially Distanced and Inclusive on-Campus Education in Armenian HEIs" (eCAMPUS-EDU-2024-CBHE). The primary objective of the survey was to evaluate the current state of digital teaching, learning, and assessment (TLA) practices at BSU and to identify both the strengths and areas requiring improvement to support the university's digital transformation. The survey was conducted among both teaching staff and students. A total of **34 teachers** and **16 students** participated, providing valuable insights into their experiences with digital tools, their perceived needs, and the obstacles they encounter in the digital learning environment. The findings from this needs analysis will serve as the basis for developing informed strategies aimed at enhancing digital competencies, improving technological infrastructure, expanding access to high-quality digital teaching and learning materials, and addressing systemic barriers to digital education. The ultimate goal is to foster a more inclusive, accessible, and future-ready educational environment at Brusov State Linguistic University.

Section 1: General Information

This section provides a demographic overview and key characteristics of the teaching staff and students who participated in the digital teaching, learning, and assessment (TLA) needs survey at Brusov State Linguistic University (BSU).

1.1. Teachers' Characteristics

A total of 34 teachers responded to the survey. The participants represent a broad mix of academic positions, age groups, and genders.

Teaching positions: The majority of respondents were Professors (22 teachers, or 61.76%), followed by Associate Professors (11 teachers, or 32.35%). A small proportion were Assistant Professors (1 teacher or 2.94%) and Professors (1 teacher or 2.94%). This composition highlights the predominance of Professor-oriented staff actively involved in day-to-day educational delivery.

Age groups: The most represented age category is 36–45 years (44.12%), indicating that mid-career professionals form the core of the faculty surveyed. Other notable age groups include:

➢ 20–35 years: 26.47%

➢ 56–65 years: 11.76%

➢ 46–55 years: 8.82%

➢ Over 65 years: 8.82%

This age distribution suggests that while the university benefits from the energy of younger educators, it also retains significant institutional knowledge among senior faculty.

Gender Distribution: The teaching staff is predominantly female: 29 women (85.29%) and 5 men (14.71%). This reflects the broader gender trend in language-focused institutions and should be considered in designing targeted capacity-building and digital training efforts.
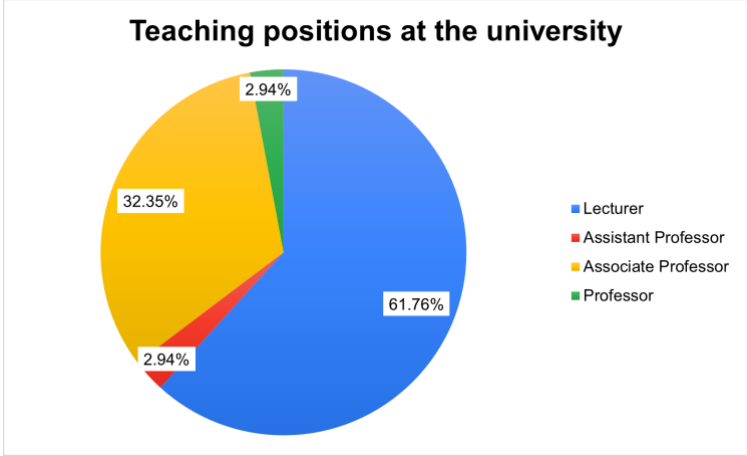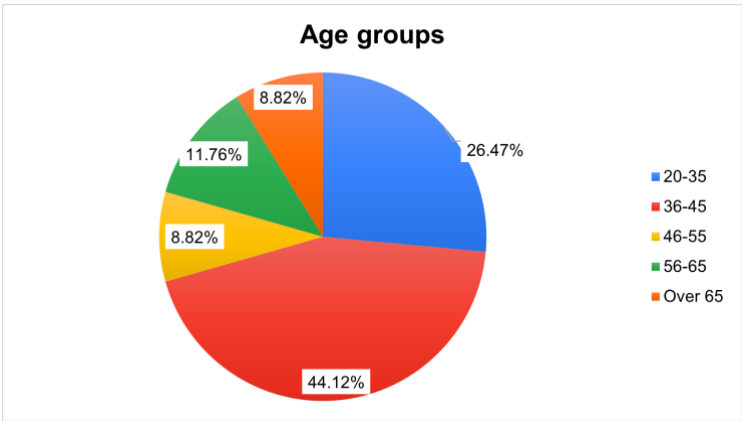

Image 1.1. Teaching positions at the university

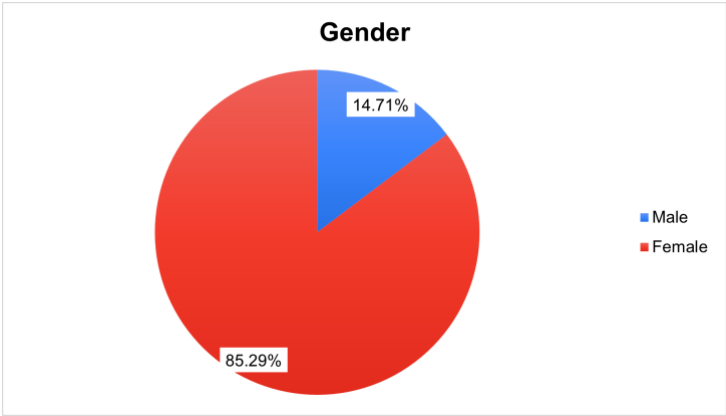
Image 1.2. Teachers' age group

Image 1.3. Teaching staff gender

1.2. Students' Characteristics

The student survey included responses from 16 students currently enrolled in BSU academic programs.

Educational levels: The majority of student participants (87.5%) are studying in Bachelor's programmes, with the remaining 12.5% enrolled in Master's programmes. This balance suggests that the findings primarily reflect undergraduate perspectives, particularly relevant for identifying foundational digital education needs.

Gender: All student respondents were female (100%), which aligns with the known gender distribution in linguistics-focused programs and highlights the importance of gender-sensitive design in educational content and platforms.

Key Insights for Section 1

The survey sample at BSU reveals a teaching staff dominated by mid-career lecturers and associate professors, most of whom are women, and a student population primarily composed of female undergraduate learners. These demographics offer essential context for interpreting the digital needs and preferences explored in the subsequent sections of the report. Tailoring digital tools, training programs, and content to this audience, particularly with a focus on inclusivity, accessibility, and practical usability, will be crucial to the university's successful digital transformation.
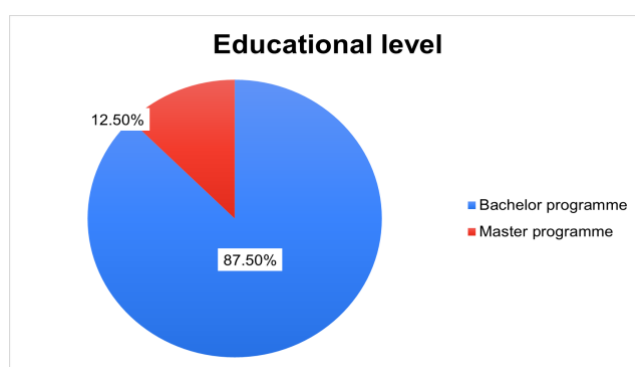
Educational level

12.50%

87.50%

■ Bachelor programme
■ Master programme

Image 1.4. Students' educational level

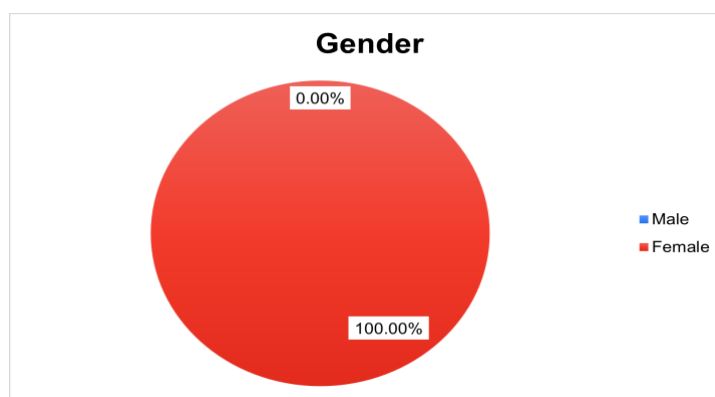**Gender**

0.00%

100.00%

■ Male
■ Female

Image 1.5. Students' gender

Section 2: Digital Competencies and Technologies in Teaching, Learning & Assessment (TLA)

The analysis of current digital teaching, learning, and assessment (TLA) practices at Brusov State Linguistic University reveals notable contrasts in perception and usage between teaching staff and students. While teachers report extensive engagement with a wide range of digital tools, students perceive fewer of these technologies being effectively applied in their learning experience.

2.1. Digital Competencies and Technologies Currently Applied

Among the 34 teachers surveyed, the highest reported usage (nearly 90%) relates to digital communication with students regarding organizational matters. This is followed by high engagement with:

➢ Digital resources for teaching in line with learning objectives (~85%)

➢ Digital tools for continuous professional development (~82%)

➢ Use of devices and pedagogical methods for effective teaching (~76%)

Teachers also indicated moderate use of tools for:

➢ Sharing and exchanging knowledge (~74%)

➢ Providing group or individual digital counselling (~67%)

➢ Developing educational resources and making them accessible (~65%)

However, lower levels of engagement were observed for:

➢ Digital assessment and feedback tools (~44%)

➢ Technologies for ensuring well-being and accessibility (~35% or lower)

➢ Blended and hybrid learning resources (~30%)

➢ Technologies supporting personalized learning pace (~20%)

These results suggest that teachers are more focused on administrative communication and content delivery than on student-centered learning personalization or well-being tools.

The student sample (16 respondents) reflects a more reserved perception of digital tool usage. While students broadly recognize the use of communication technologies (87.5%), they perceive lower visibility of several key practices.

Students particularly emphasized the importance of:

➢ Assessment and feedback tools (~56%)

➢ Digital devices for effective teaching (~50%)

➢ Activities that require collaboration and creativity (~45–50%)

➢ Counseling and self-study support tools (~40–45%)

In contrast, they perceived very limited usage of:

➢ Hybrid and blended learning models (~10–15%)

> ➤ Digital accessibility resources

> ➤ Technologies supporting well-being or learning customization (~5–10%)

This indicates that students are calling for more visible, interactive, and participatory digital learning experiences.

Area of Focus	Teacher Agreement	Student Recognition	Observation
Communication with students	Very high (~90%)	Very high (~87%)	Strong alignment; most consistently used across both groups
Content delivery and pedagogy	High (~75–85%)	Moderate (~40–50%)	Students may not perceive backend efforts
Assessment and feedback	Moderate (~44%)	High (~56%)	Students value these tools more than teachers report using them
Collaborative active learning	Moderate (~50%)	Moderate to high (~50%)	A shared interest; opportunity for growth
Well-being, personalization, inclusion	Low (~10–30%)	Very low (~5–10%)	Under-prioritized by both groups
Hybrid/Blended learning	Low (~30%)	Very low (~10%)	Indicates need for investment and promotion

The radar chart clearly highlights the disproportionate emphasis: teachers dominate in backend-oriented categories (e.g., professional development, lesson planning), whereas students concentrate on interaction, feedback, and practical engagement. This calls for bridging the gap between preparation and perceived usefulness through more visible implementation and integration of tools in everyday learning.
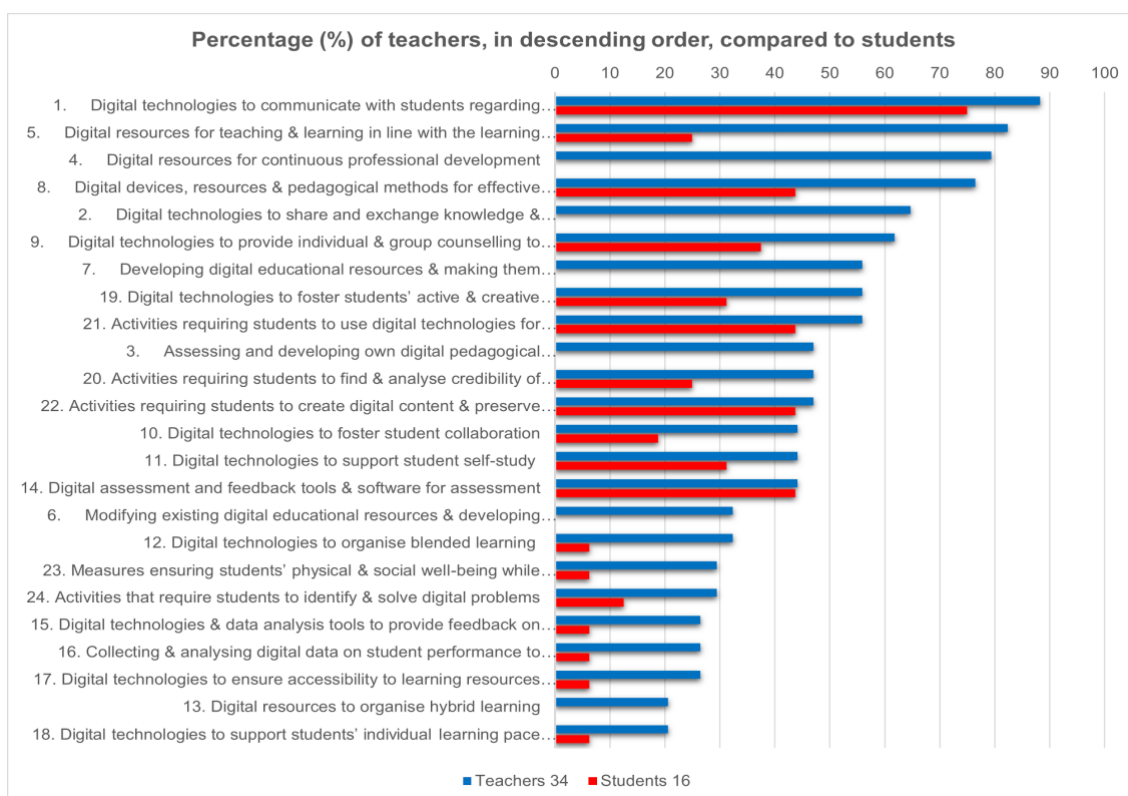
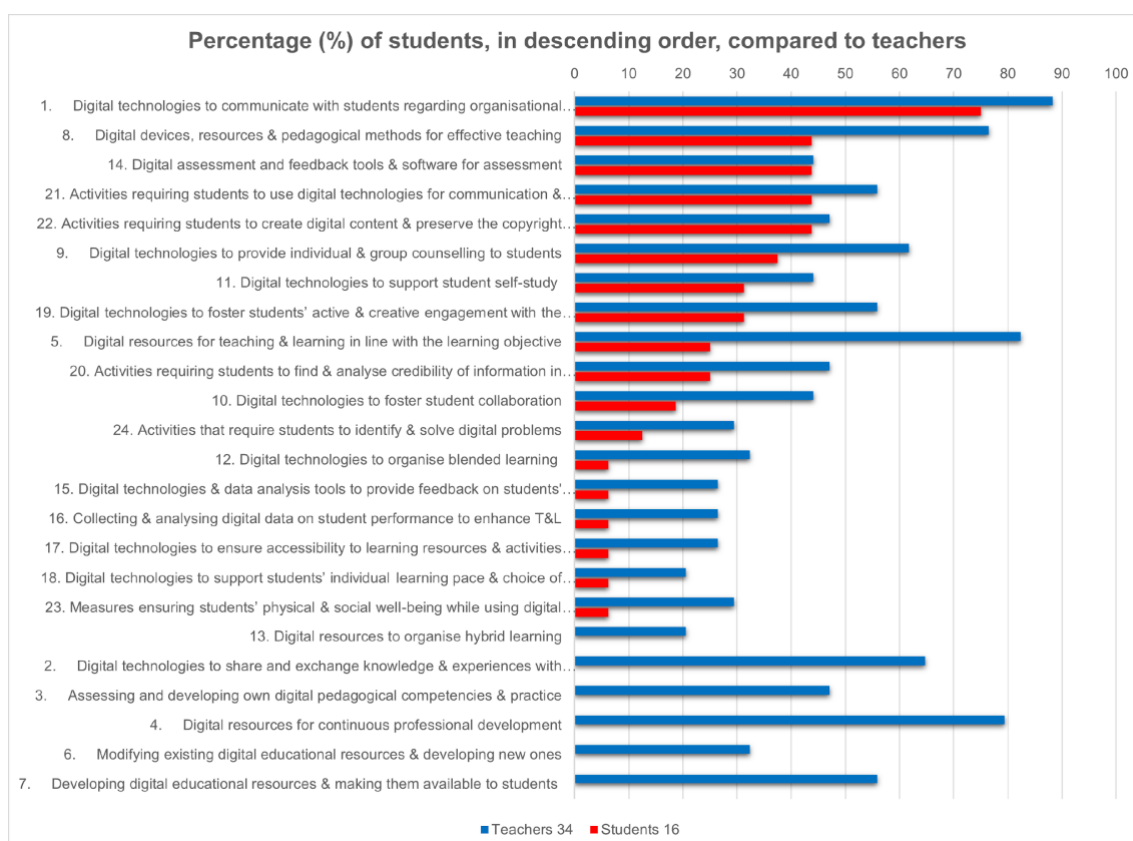Image 2.1.1. Percentage (%) of teachers, in descending order, compared to students

Image 2.1.2. Percentage (%) of students, in descending order, compared to teachers
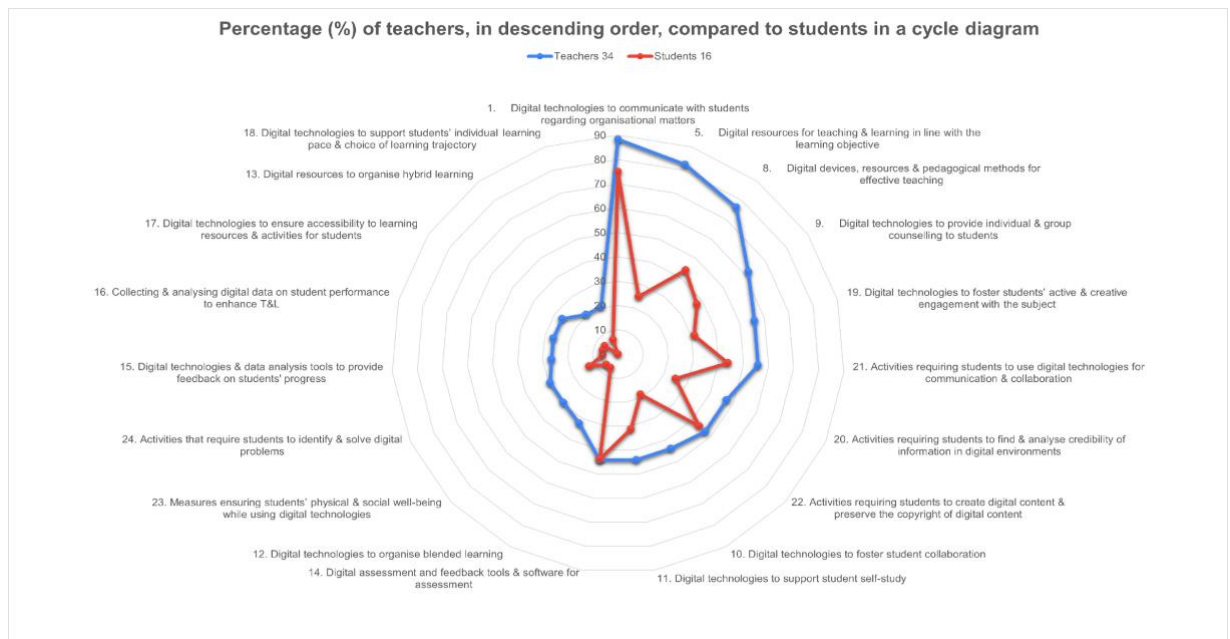
Image 2.1.3. Percentage (%) of teachers, in descending order, compared to students in a cycle diagram

2.2. Level of Need for Developing the Digital Competencies and Technologies[1]

The scale-based responses (0 = not needed, 3 = highly needed) reveal important differences between teachers and students in perceived digital needs.

Key Findings

1. Overall Need Perception

➢ Students rated nearly all digital competencies as more necessary than teachers did.

➢ Teachers' needs clustered between 1.2 and 1.7, while student needs often exceeded 2.0, indicating greater urgency from the learners' side.

2. Top Priority Areas for Teachers

➢ Self-study support tools (~1.9)

➢ Pedagogical methods for digital teaching (~1.8)

➢ Content development tools (~1.7)

➢ Digital creativity and student engagement tools (~1.7)

3. Top Priority Areas for Students

➢ Digital communication and self-study tools (~2.3)

➢ Creative and engaging digital tools (~2.2)

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[1] This indicator (weighted average rating) is calculated by multiplying the number of people who gave ratings of 0, 1, 2, and 3 by the corresponding rating, summing these products, and dividing by the total number of respondents. For example: (0 x 10 people + 1 x 20 people + 2 x 30 people + 3 x 20 people) / (10+20+30+20) people = 140 / 80 people = 1.75 (out of a maximum of 3).

- ➢ Assessment, interactivity, and gamification (~2.1–2.3)
- ➢ Support for accessibility and well-being (~2.0+)

4. Key Discrepancies

- ➢ Students see significantly more need for inclusive practices, feedback tools, and adaptive learning.
- ➢ Teachers report relatively less urgency in these areas potentially due to limited awareness or training.

5. Shared Priorities

Both groups identified communication tools, digital pedagogy, and collaborative platforms as important to develop further, suggesting a clear base for aligned institutional investment.

Recommendations Based on Section 2.1–2.2

- ➢ Close the Perception Gap: Increase transparency and student awareness about existing digital tools through training, onboarding, and visible integration in coursework.
- ➢ Enhance Teacher Training: Prioritize areas students demand most assessment tools, hybrid/blended delivery, and well-being support.
- ➢ Promote Interactive Learning: Invest in tools and methodologies that foster co-creation, digital problem-solving, and creativity.
- ➢ Scale Hybrid Learning: Design and deploy hybrid learning models to align with modern educational needs and student expectations.
- ➢ Address Inclusion and Accessibility: Ensure content and platforms are accessible, inclusive, and supportive of diverse learning trajectories.
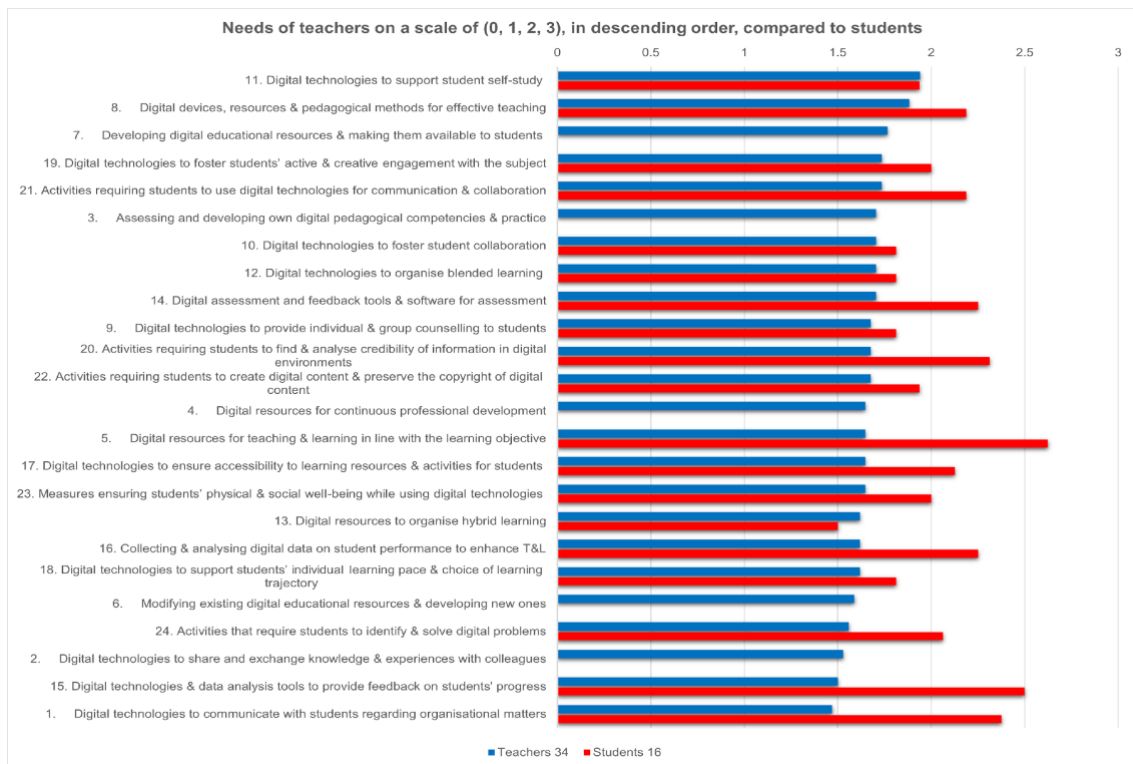
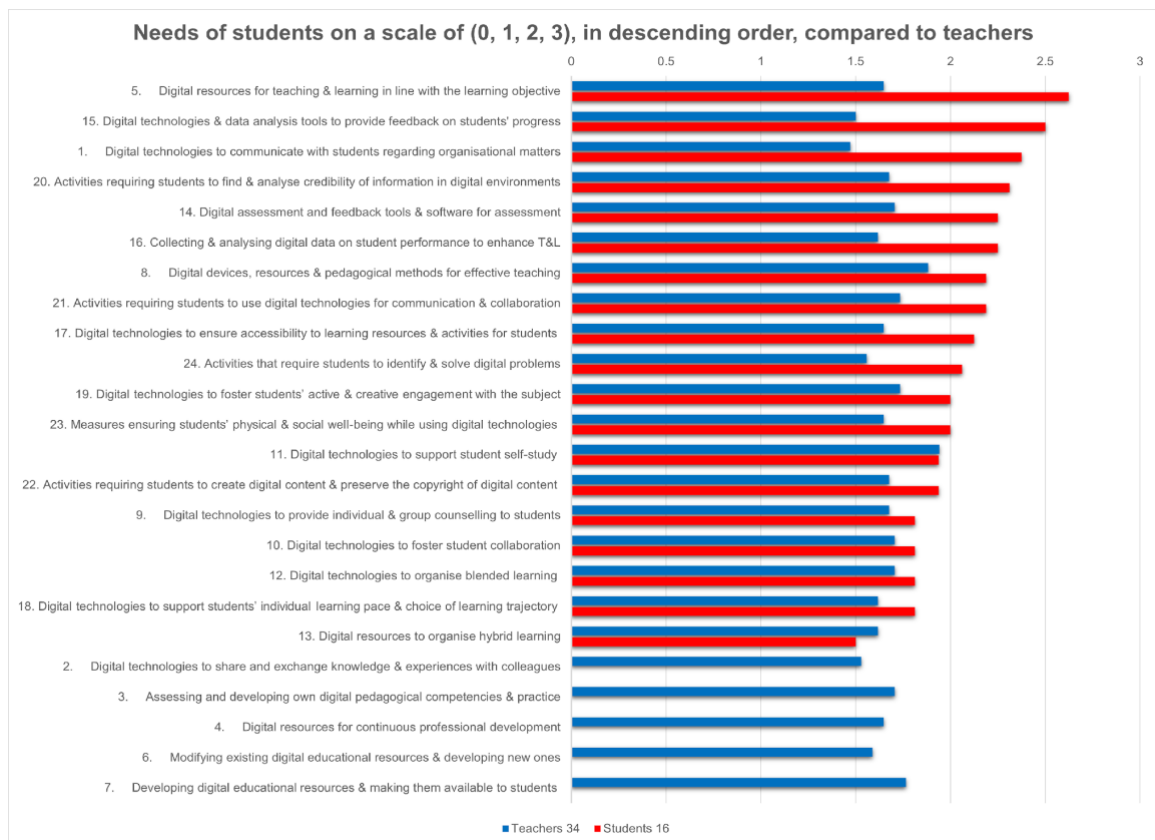Image 2.2.1. Needs of teachers on a scale of (0, 1, 2, 3), in descending order, compared to students

Image 2.2.2. Needs of students on a scale of (0, 1, 2, 3), in descending order, compared to teachers
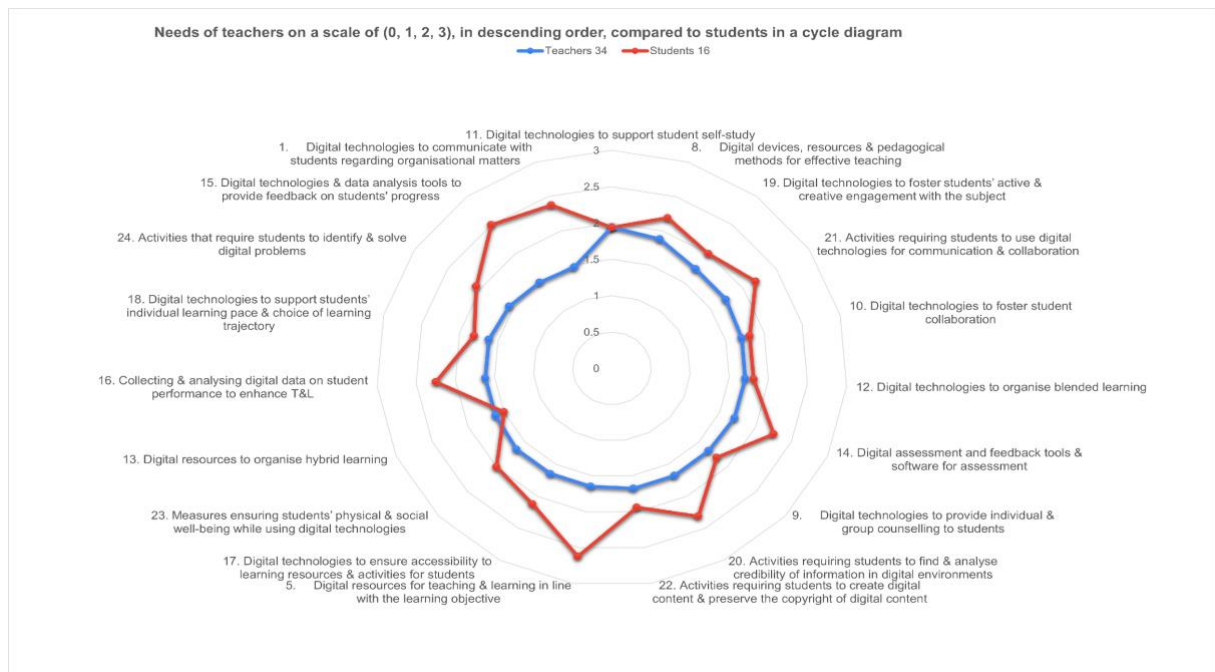
Image 2.2.3. Needs of teachers on a scale of (0, 1, 2, 3), in descending order, compared to students in a cycle diagram

Section 3: Technologies and Facilities Supporting Digital TLA

3.1. Technologies and Facilities Currently Applied to Support Digital TLA

The analysis of digital technologies and facilities currently used at BSU shows noticeable discrepancies in both usage frequency and perception between teaching staff and students. The data reflects broader institutional usage of conventional tools, yet emerging technologies remain underused by both groups.

General trends: Teachers reported more frequent use of digital technologies and facilities across nearly all categories, with students reporting moderate use or awareness. This suggests a top-down implementation of tools that may not yet be fully embedded in the students' learning experience.

Top tools among teachers:

➢ The most widely used tools by BSU teachers include Text-to-speech software (80%), personal computing devices (around 75%), and speech-to-text tools (70%).

➢ Tools like Web 3.0, LMS, E-portfolios, and virtual classrooms are also frequently used, showing strong integration of blended learning and documentation practices.

➢ Multimedia content tools, VR classrooms, and networking tools (cloud-based collaboration) are also noted as common, indicating teacher exposure to diverse technological methods.

Top tools among students:

➢ Students most frequently cited LMS (70%), smartphones (around 65%), and speech-to-text tools (60%) as the technologies they use.

➤ Other notable mentions include e-portfolios, personal computing devices, and chat sessions, highlighting their emphasis on tools that facilitate communication and learning access.

➤ Students reported lower usage of more institutional or backend systems such as analytics, classroom response systems, and VR/AR tools.

Emerging and less common technologies:

➤ Both groups reported low usage of tools like Braille displays, AI feedback systems, semantic search tools, and AR/VR platforms.

➤ This points to either a lack of infrastructure or training to make these technologies part of standard TLA practice.

Gaps and needs:

➤ There is a clear disparity in awareness and use of certain technologies. For example, virtual classrooms and interactive whiteboards are reported more by teachers, while chat and mobile communication tools are emphasized by students.

➤ This suggests a gap between delivery (teacher-led) and engagement (student-led) perspectives on digital TLA.

Recommendations:

1. Bridge the Exposure Gap: Organize workshops to help students navigate platforms commonly used by teachers (e.g., LMS functions, interactive whiteboards).

2. Invest in Emerging Tools: Institutions should prioritize AI integration and VR/AR labs, including training for both staff and students.

3. Improve Accessibility: Increase support for alternative input/output technologies such as speech recognition and Braille displays to foster inclusive learning.

4. Foster Communication Tools: Scale up the use of real-time and asynchronous chat tools to align with students' interaction preferences.
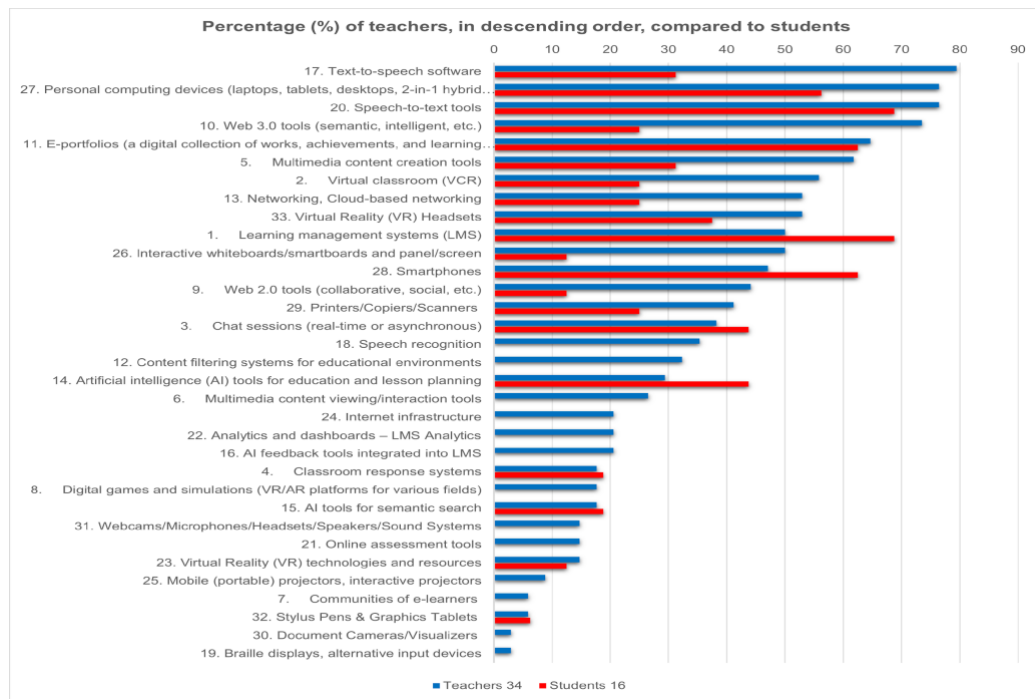
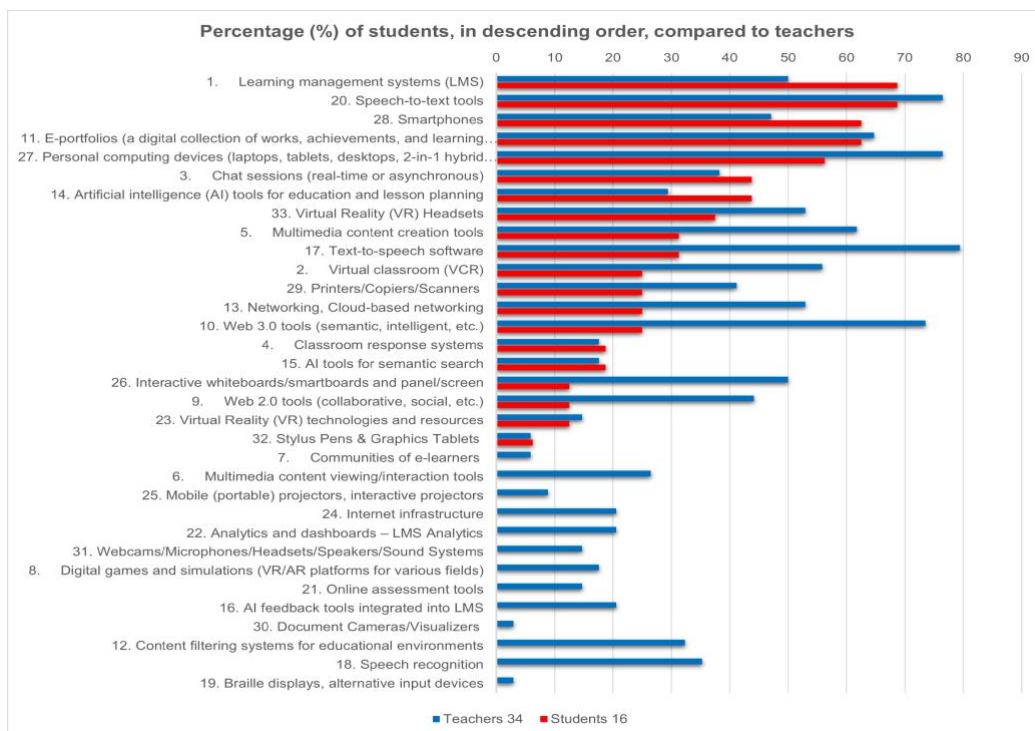Image 3.1.1. Percentage (%) of teachers, in descending order, compared to students

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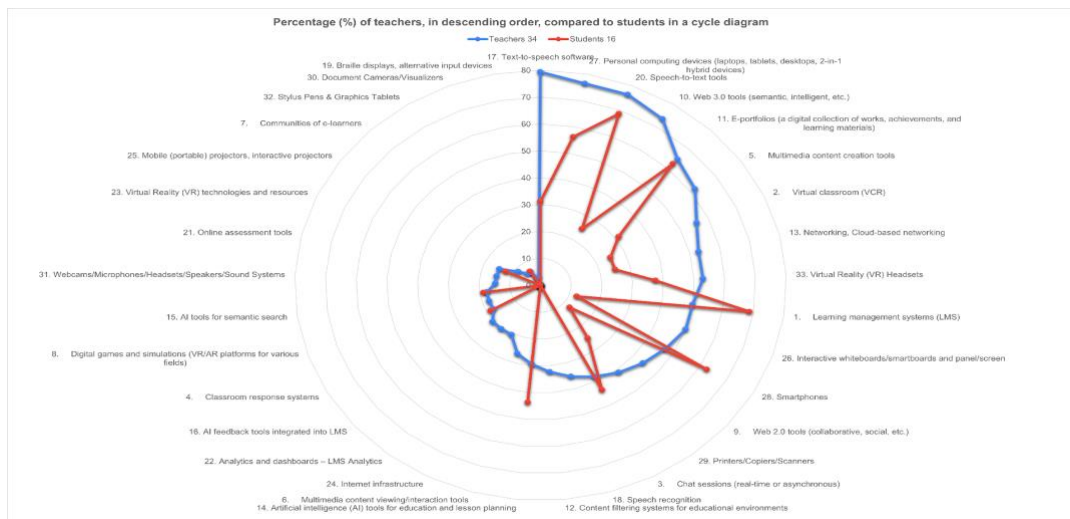
Image 3.1.3. Percentage (%) of teachers, in descending order, compared to students in a cycle diagram

3.2. Usefulness of the Technologies and Facilities Supporting Digital TLA

This section shows how teachers and students rate the usefulness of various digital tools used in teaching, learning, and assessment.

Usefulness by Teachers Compared to Students

Teachers tend to assign higher usefulness scores across most technologies.

Top-rated technologies by teachers:

 ➢ LMS, smartphones, personal computing devices, and multimedia tools rank highest.

 ➢ Other highly valued tools include virtual classrooms, interactive projectors, speech-to-text software, and cloud networking platforms.

 ➢ AI tools for lesson planning, online assessments, and classroom response systems also score well, showing openness to innovation.

Usefulness by students compared to teachers:

 ➢ Students' highest-rated tools include Internet infrastructure, smartphones, projectors, and printers.

 ➢ Tools supporting accessibility such as speech-to-text, text-to-speech, and Braille displays are ranked higher by students than teachers.

 ➢ Communication technologies such as chat sessions and webcams/speakers are also perceived as highly useful.

Gaps in perception:

 ➢ Teachers rank planning and delivery tools (e.g., LMS, AI lesson tools, whiteboards) higher.

- Students emphasize tools that support accessibility, real-time interaction, and communication.
- Tools like VR/AR, semantic AI, and content filtering systems are perceived as less useful or unfamiliar by both groups, underscoring underutilization.

Cycle diagram insights:

- Teachers' ratings form a wider perimeter on the cycle chart, indicating broader exposure and reliance on a variety of tools.
- Students' ratings spike around tools directly impacting their learning access, such as infrastructure, smartphones, and speech-based technologies.
- Divergence is particularly visible in areas like VR headsets, semantic AI, and advanced assessment systems, where students' perceived usefulness is moderate but often higher than actual reported use.

Key Findings and Recommendations

- High Agreement on Core Tools: LMS and smartphones are recognized as essential by both teachers and students.
- Students Prioritize Communication and Accessibility: Students find speech tools and interaction platforms more impactful than some formal instructional systems.
- Teachers Favor Instructional Infrastructure: Teaching staff prioritize tools related to content delivery and planning.
- Emerging Technologies Need Institutional Focus: VR, AI, and accessibility tools hold potential but remain underexplored.
- Training and Awareness Needed: Enhance digital literacy among students, enabling them to utilize existing institutional tools effectively.

Conclusion

BSU possesses a solid digital infrastructure; however, a more student-centric strategy is needed to balance technological implementation between planning (by teachers) and interaction (with students). To achieve inclusive and future-proof education, the university must boost accessibility, expand training, and align tools with learners' real-world needs.
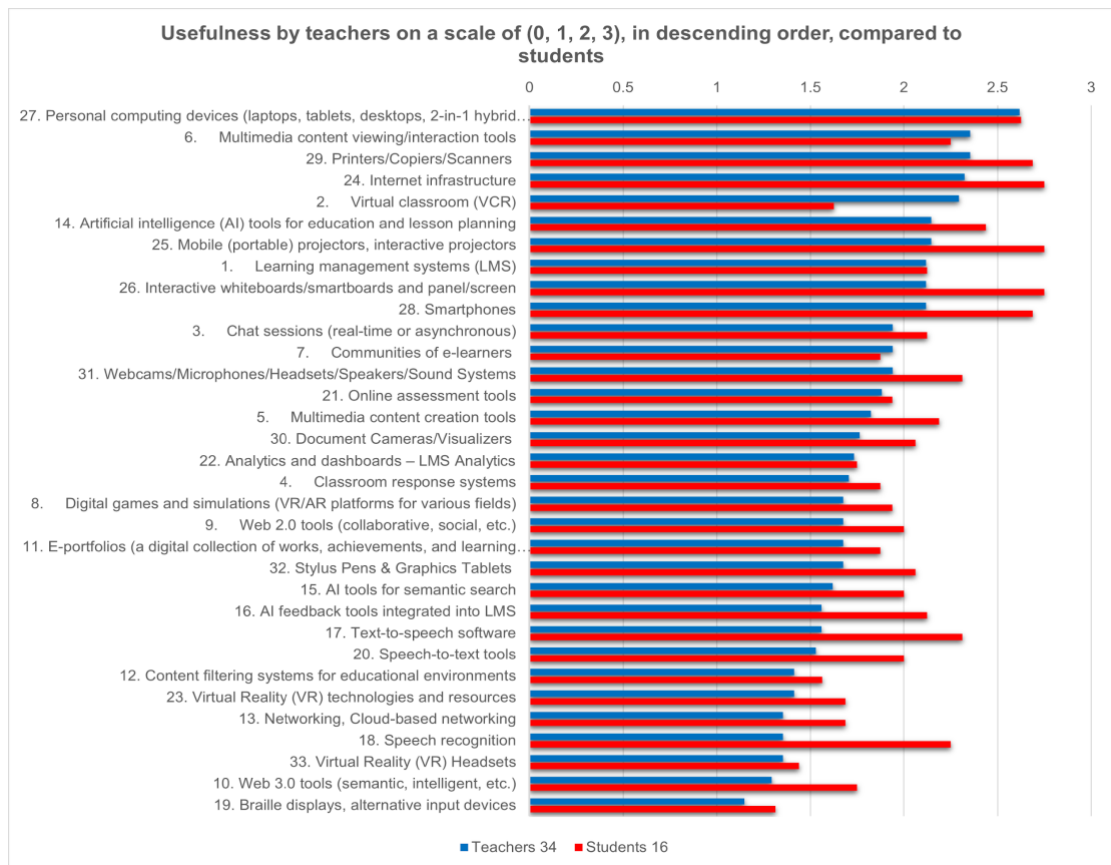
Image 3.2.1. Usefulness by teachers on a scale of (0, 1, 2, 3), in descending order, compared to students
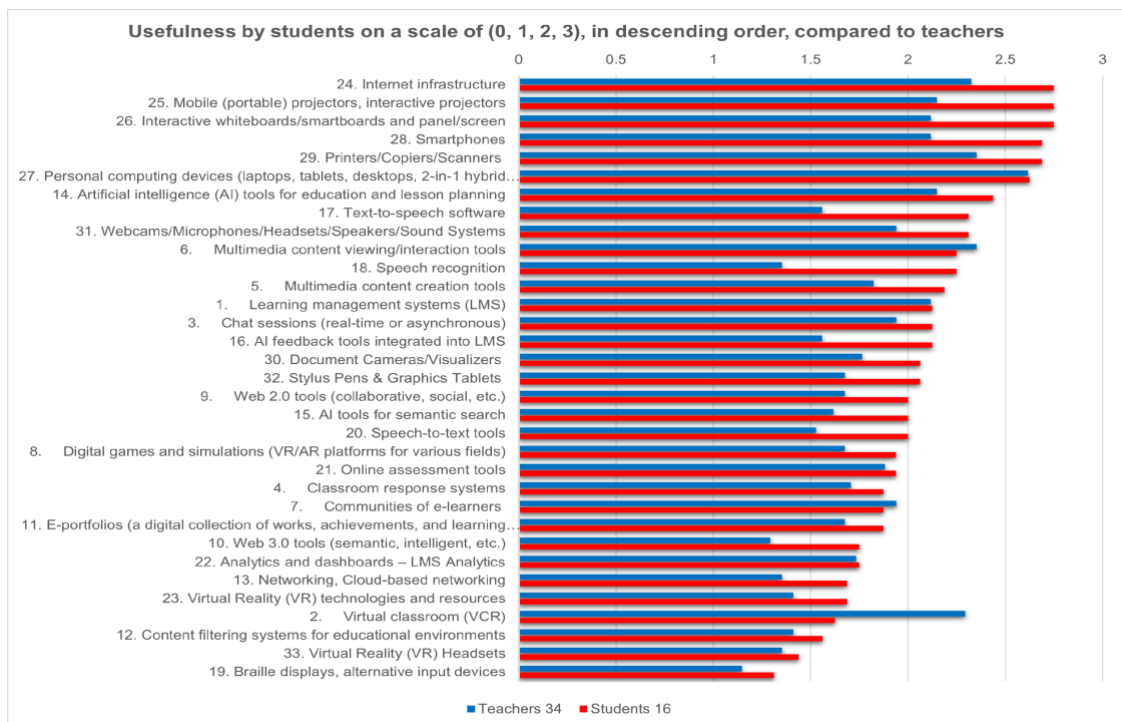

Image 3.2.2. Usefulness by students on a scale of (0, 1, 2, 3), in descending order, compared to teachers
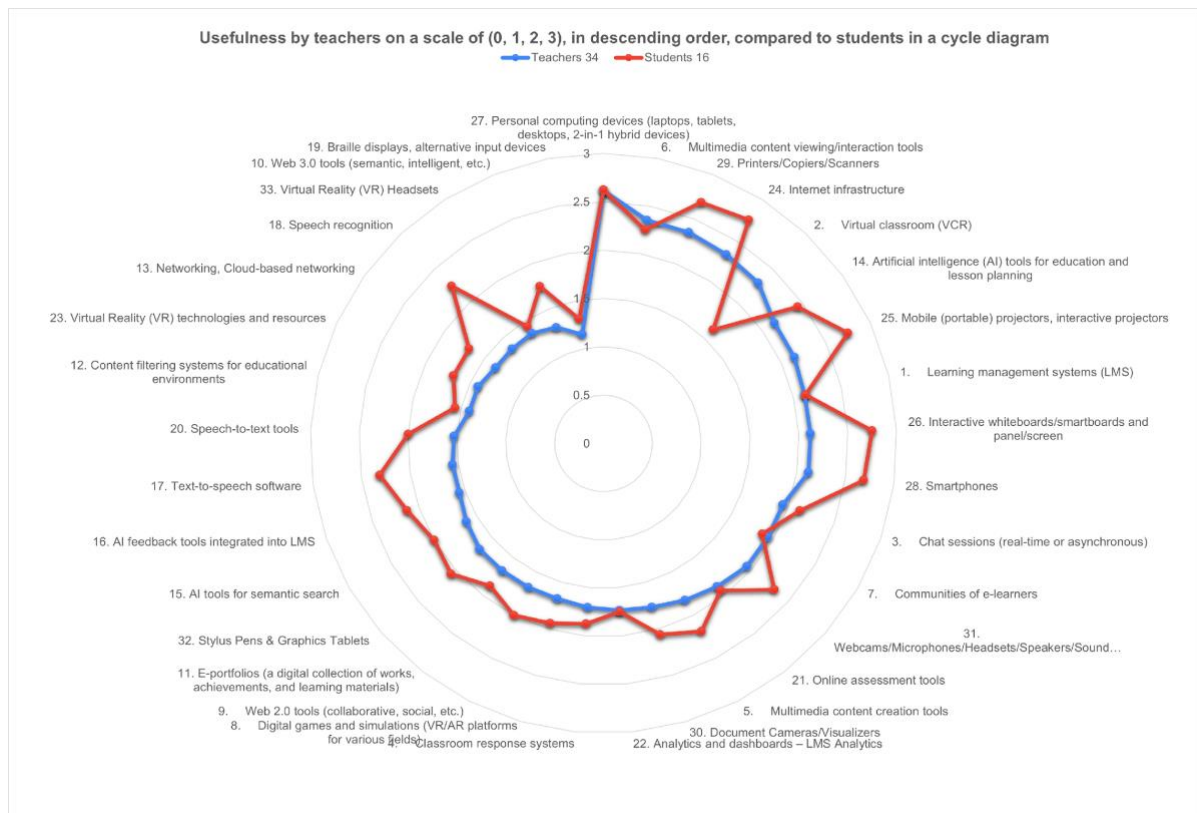
Image 3.2.3. Usefulness by teachers on a scale of (0, 1, 2, 3), in descending order, compared to students in a cycle diagram

Section 4: Teaching and Learning (Study) Materials

4.1. Study Materials Currently in Use

General Trends

➢ Teachers consistently report higher usage of nearly all material types compared to students, which may reflect their role in designing and distributing instructional content.

➢ Both teachers and students identify e-books, course/lecture notes, and *textbooks* as the most commonly used materials, indicating the continued importance of traditional academic resources.

➢ Materials like virtual labs, MOOCs, infographics, and collaborative documents (wikis*)* are rarely used, especially by students, suggesting potential underutilization or lack of integration into coursework.

Materials Highly Rated by Teachers:

➢ E-books *and* textbooks *are* the most used and valued, both scoring near or at 100%.

➢ Course/lecture notes, handouts/worksheets, and presentations (e.g., PowerPoint) follow closely, underscoring a strong preference for structured and instructor-generated resources.

> ➢ Academic articles/journals and study guides also show high usage, indicating that teachers emphasize depth and supplemental reading.

> ➢ Multimedia elements such as online lectures, video presentations, and tutorials are used to a lesser degree.

Materials Highly Rated by Students:

> ➢ Students also report e-books, lecture notes, and *textbooks* as their top materials.

> ➢ They show slightly more interest than teachers in materials like reading lists, animated tutorials, and instructor-recorded videos, reflecting a desire for summarized and visual learning aids.

> ➢ However, student engagement with more advanced or collaborative tools (e.g., MOOCs, wikis, labs) remains low, mirroring the teachers' limited use.

Comparative Insights:

> ➢ The cycle diagram illustrates that teachers consistently report higher engagement with all materials.

> ➢ Students tend to value concise and visually engaging formats more than text-heavy traditional ones.

> ➢ The greatest perception gaps appear in interactive and *collaborative materials* (e.g., MOOCs, labs, OERs), where students either have limited access or find them less integrated into their studies.

Recommendations for Improvement

1. Enhance Student Familiarity with Digital Materials: Offer workshops or onboarding support to help students better use underutilized resources like OERs, collaborative tools, and virtual labs.

2. Increase Access and Integration: Ensure materials like narrated presentations, online lectures, and instructor-recorded videos are systematically used and accessible on all platforms.

3. Encourage Multimedia Use: Motivate faculty to embed more multimedia and modular content to meet evolving learner preferences.

4. Introduce Continuous Feedback: Collect ongoing feedback from students on the usefulness and accessibility of materials to guide revisions.

5. Blend Formats Effectively: Combine traditional and digital materials within course design to meet the needs of diverse learners.

Conclusion

BSU demonstrates a firm reliance on foundational academic materials, including textbooks, e-books, and notes. However, the institution has the opportunity to strengthen engagement and effectiveness by expanding the use of interactive and digital materials that resonate more with students' learning preferences.
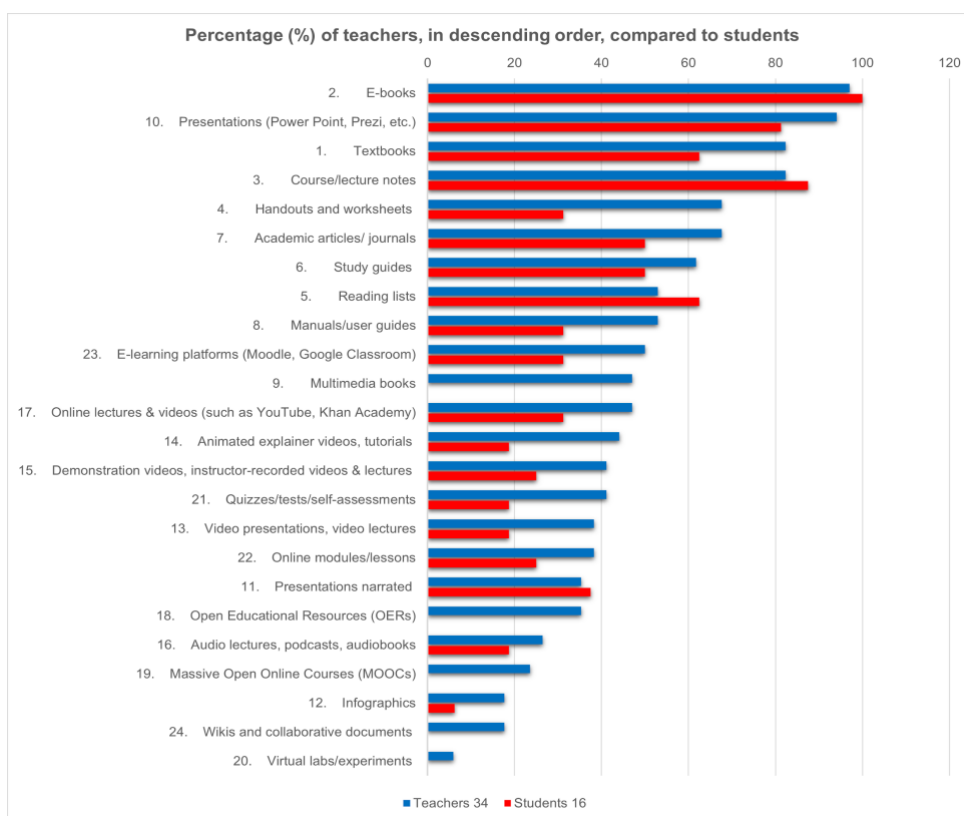
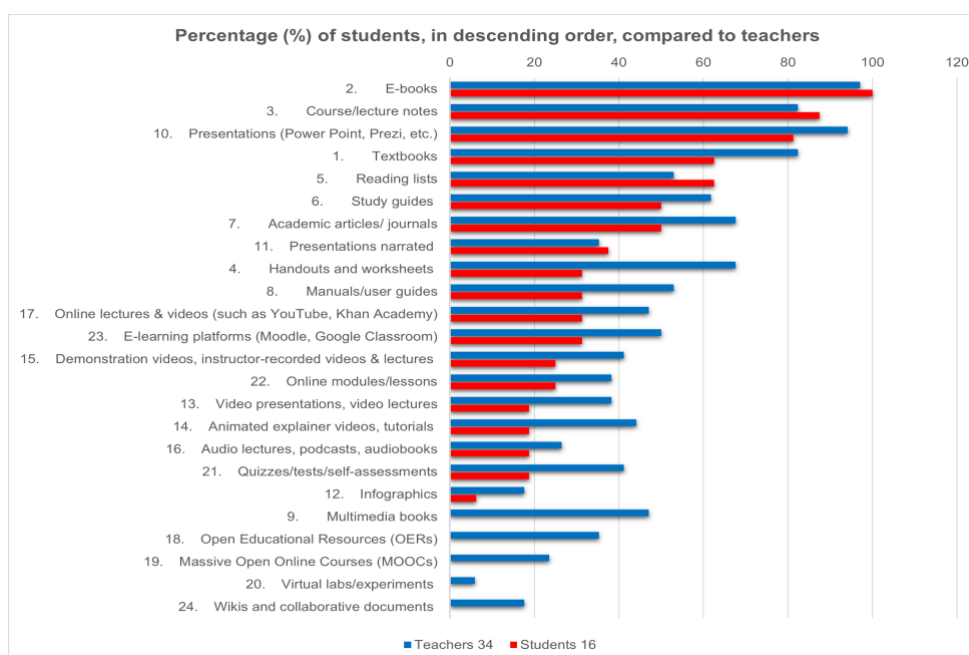Image 4.1.1. Percentage (%) of teachers, in descending order, compared to students

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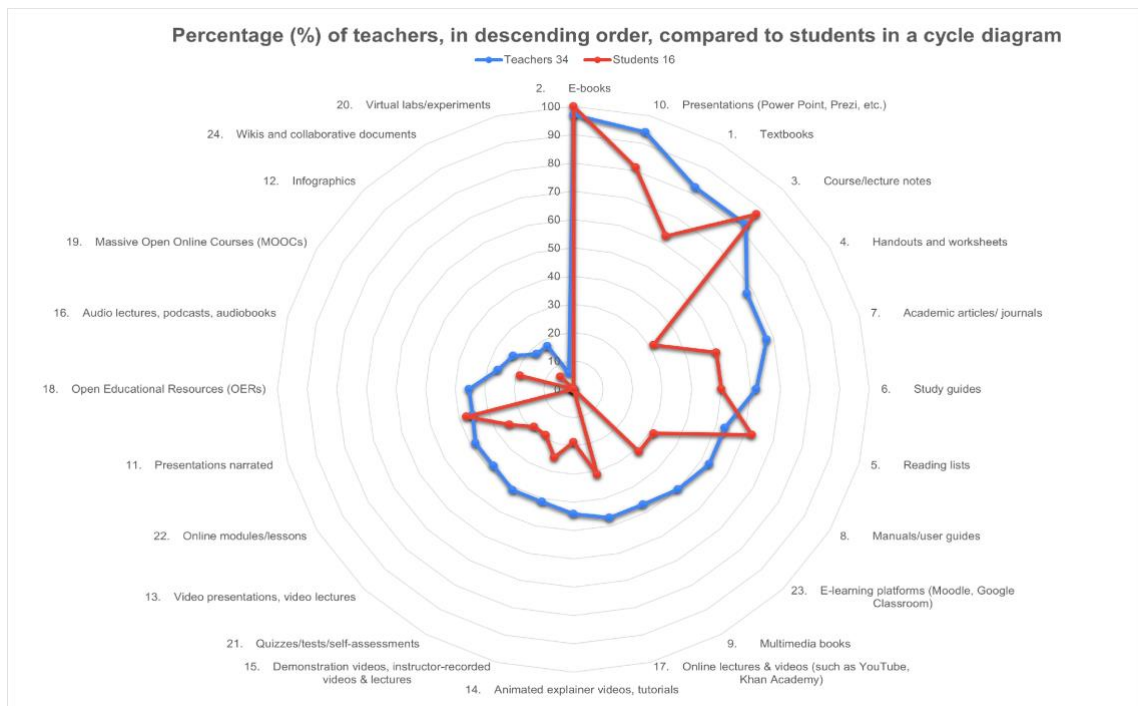
Image 4.1.3. Percentage (%) of teachers, in descending order, compared to students in a cycle diagram

4.2. Usefulness of the Study Materials for TLA

Usefulness ratings were collected on a 0–3 scale from teachers and students. The feedback highlights both alignment and divergence in the perceived value of various materials.

Teachers' Feedback:

> ➢ E-books, textbooks, and lecture notes received the highest ratings (approaching 3), reaffirming their central role in teaching.

> ➢ Presentations, study guides, and academic articles also received strong support.

> ➢ While multimedia books, online videos, and E-learning platforms were moderately rated, tools like wikis, MOOCs, and virtual labs scored lowest suggesting either unfamiliarity or lack of use.

Students' Feedback:

> ➢ Students echoed teachers in valuing *textbooks*, *e-books*, and *lecture notes* most highly, though their average scores were slightly lower.

> ➢ However, they gave relatively higher scores to animated videos, demonstration videos, and online lectures, indicating a strong preference for audiovisual content.

> ➢ Tools such as virtual labs, infographics, and *OERs* received moderate appreciation, again hinting at either curiosity or unmet potential.

Comparative Analysis

Material Type	Teachers' Preference	Students' Preference	Observations
E-books, textbooks, lecture notes	Very high (near 3.0)	High (2.5–2.8)	Shared priority
Presentations, study guides	High	Moderate to High	Teachers use more frequently
Online videos, animated tutorials	Moderate	High	Students favor dynamic formats
MOOCs, virtual labs, wikis	Low to Moderate	Moderate	Underused by both
Narrated presentations, podcasts	Moderate	Moderate	Further integration needed

Recommendations

1. Incorporate More Audiovisual Resources: Prioritize the development of video lectures, tutorials, and narrated content to meet student learning preferences.

2. Improve Access to Underused Tools: Boost institutional support and training for OERs, virtual labs, and collaborative platforms to improve their adoption.

3. Balance Between Core and Emerging Materials: Retain strong emphasis on foundational content while integrating student-preferred digital formats.

4. Foster Feedback Channels: Engage both groups in regular evaluations to fine-tune resource selection and application.

Conclusion

At Brusov State University, the current teaching and learning materials are centered around traditional academic resources. However, students are showing increased interest in multimedia and interactive formats. Closing the gap between current practice and student preference, particularly by integrating audiovisual and collaborative materials, can elevate the digital learning experience and support modern pedagogical goals.
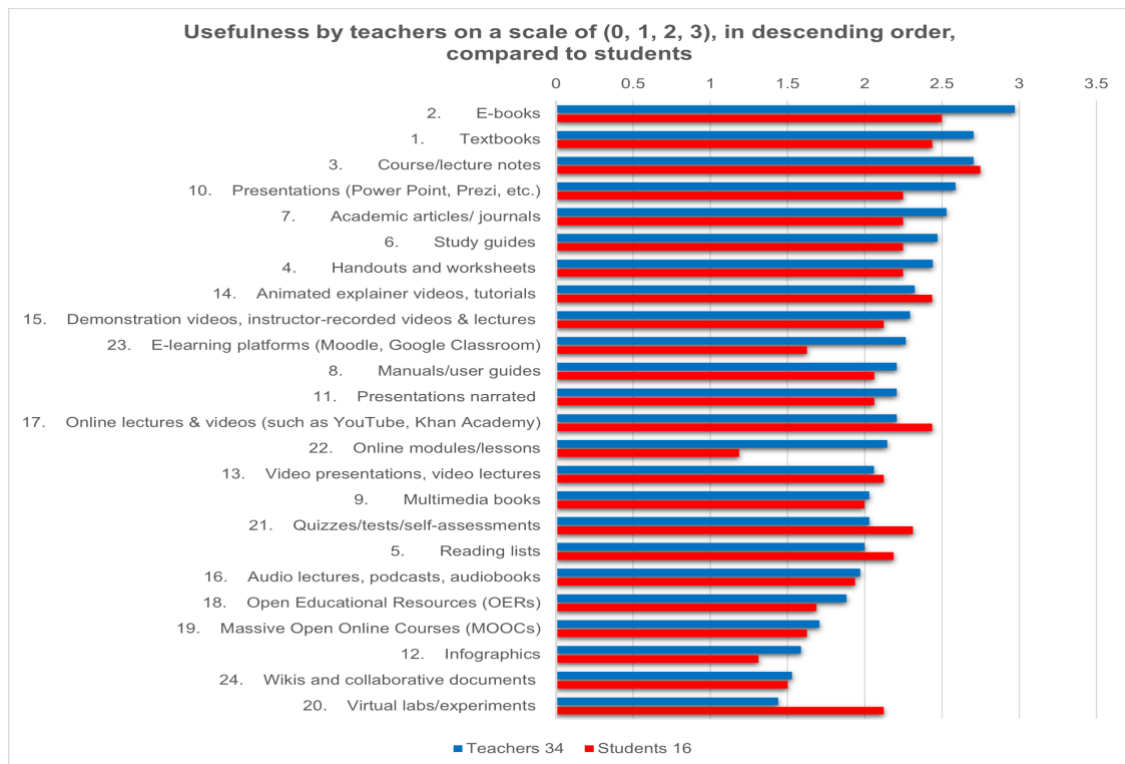
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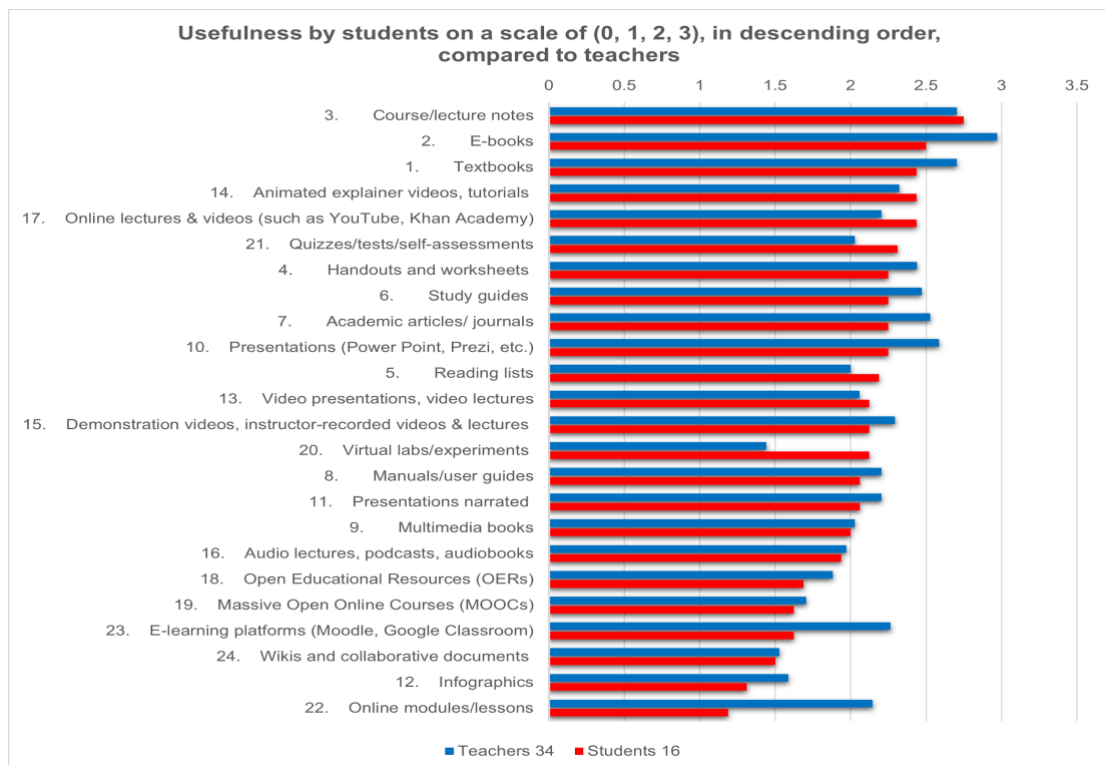

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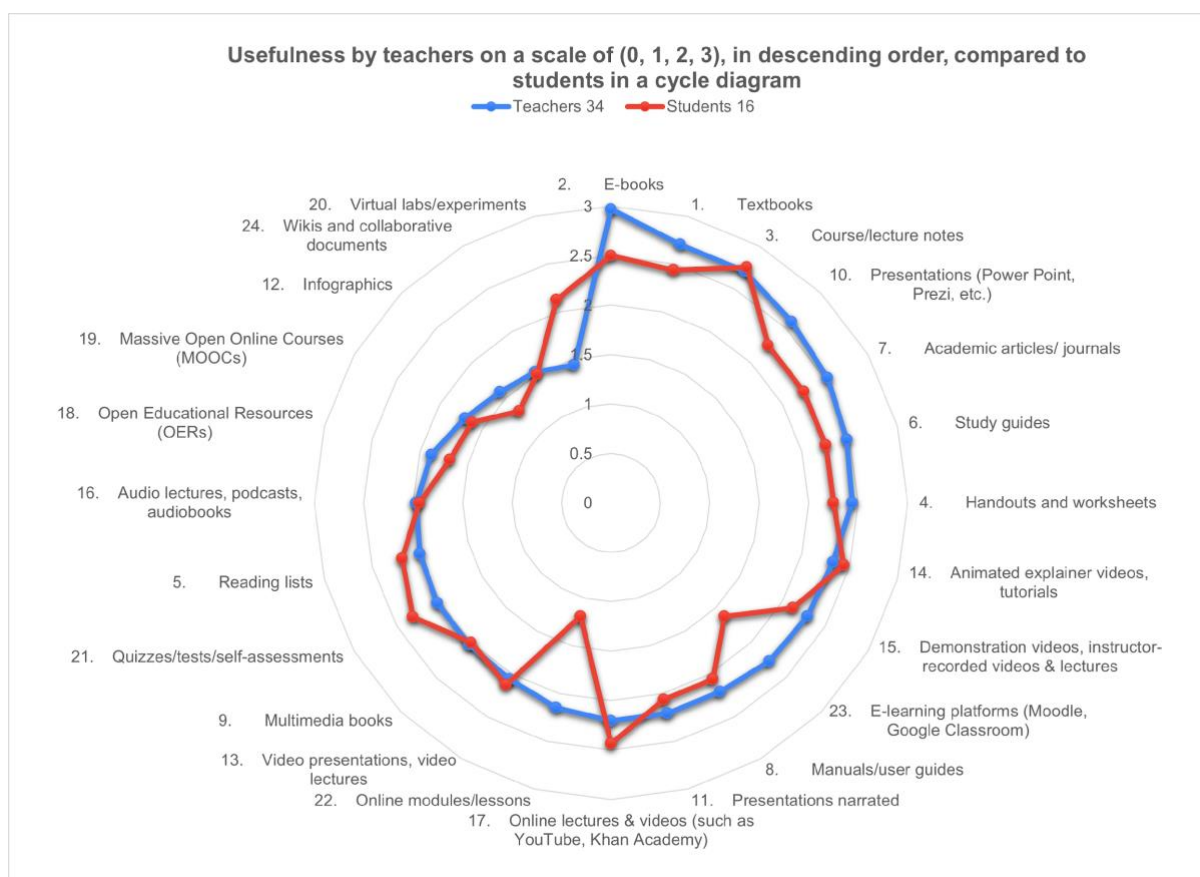
Image 4.2.3. Usefulness by teachers on a scale of (0, 1, 2, 3), in descending order, compared to students in a cycle diagram

Section 5. Main Obstacles to Digital TLA

This section outlines the key barriers to the adoption and effective use of digital teaching, learning, and assessment (TLA) at BSU, based on survey responses from both teachers and students. It also summarizes the teachers' past training experiences in digital TLA.

5.1. Main Obstacles to Digital TLA in HEIs

Key Findings

Top obstacles identified by teachers:

➢ The most frequently cited obstacle was the underdeveloped digital infrastructure and lack of necessary equipment, acknowledged by approximately 80% of teachers.

➢ Insufficient digital competencies among teaching staff were also identified as a significant challenge (~60%).

➢ Around 50% of teachers also recognized students' lack of digital competencies as a barrier to digital TLA.

➤ A significant issue raised by teachers (nearly 60%) was the lack of digital resources available in Armenian, which limits localized, accessible content delivery.

Students' perspective:

➤ Students similarly identified infrastructure deficits as the main challenge (~85%), even more than teachers.

➤ A slightly lower percentage of students (~55%) noted insufficient digital competencies among teachers.

➤ Students were more modest in identifying their own digital skill gaps (~40%).

➤ Notably, the lack of Armenian-language resources was also highlighted by about 55% of students, confirming it as a shared concern.

➤ Only a small number of students found the question difficult to answer (~10%), suggesting a relatively high awareness of obstacles.

Comparison and interpretation:

➤ Teachers view the barriers more acutely in terms of professional competencies and instructional infrastructure.

➤ Both groups strongly agree on the importance of improving infrastructure and access to localized content.

➤ While teachers show concern for both student and institutional readiness, students emphasize practical limitations (tools, content, and skill gaps in delivery).

➤ The results underscore a need for strategic investments in technology, development of Armenian-language materials, and skills training for both educators and learners.

Percentage (%) of teachers, in descending order, compared to students

1. Underdeveloped digital infrastructure and lack of necessary…
2. Teaching staff's insufficient digital competencies
3. Students' insufficient digital competencies
4. Insufficient digital resources in Armenian
5. I find this question hard to answer
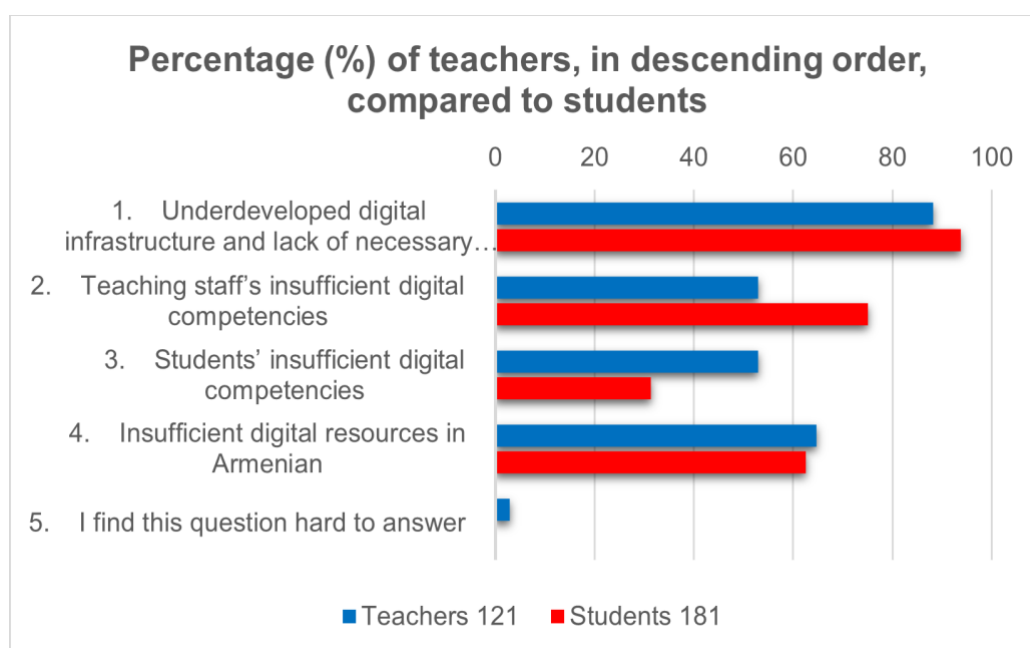
■ Teachers 121   ■ Students 181

Image 5.1. Percentage (%) of teachers, in descending order, compared to students

5.2. Teachers' Previous Participation in the Training on Digital TLA

Key Findings

➤ Only 44.1% of surveyed teachers reported having participated in any retraining or upskilling activities related to digital TLA.

➤ The remaining 55.9% have not taken part in any such training programs.

Implications

➤ The low participation rate contributes directly to the skills gap highlighted earlier in 5.1.

➤ This suggests an urgent need to increase access to training and promote participation through institutional support or incentives.

➤ Without consistent and widespread professional development, digital transformation in teaching practices will remain limited.
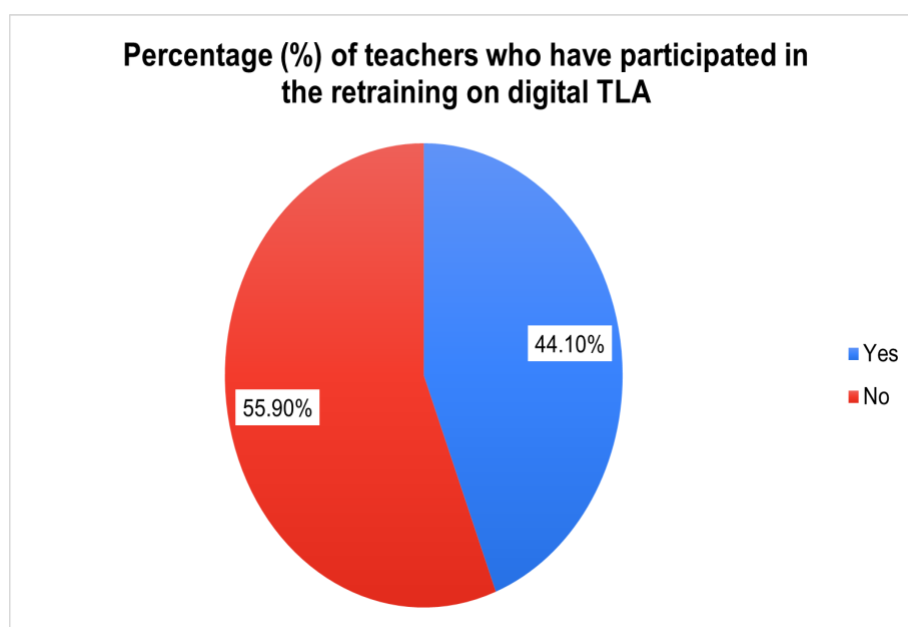

Image 5.2. Percentage (%) of teachers who have participated in the retraining on digital TLA

5.3. Main Topics of Teachers' Previous Training on Digital TLA

Top Reported Training Areas

1. Learning Management Systems (LMS) – the most common focus of digital training.

2. Creating and structuring digital educational materials

3. Interactive tools and digital assessment methods (e.g., quizzes, polls, auto-graded tests)

4. Multimedia integration into lessons (audio/video content)

5. Use of digital communication tools, including video conferencing platforms

6. Basic digital literacy and software training

7. Online course design and blended learning techniques

8. Introduction to digital pedagogy

Analysis

- The training content shows a practical orientation focused on core teaching and communication tools.

- However, there is limited exposure to emerging educational technologies, such as AI tools, VR/AR, or accessibility solutions, which may limit innovation and inclusivity in TLA.

- The strong presence of LMS and assessment tools in training reflects institutional alignment with remote or hybrid delivery models.

Recommendations

1. Expand training scope to include advanced digital competencies (AI, accessibility, immersive technologies).

2. Offer tiered training programs to support both foundational and progressive skill-building.

3. Create incentives for continuous participation (e.g., micro-credentials, teaching bonuses).

4. Monitor and align training offers with the specific digital barriers identified by teachers and students.

Summary

- Obstacles: Teachers and students at BSU agree that poor infrastructure, digital skill gaps, and the lack of Armenian-language digital content are the main obstacles to digital TLA.

- Training Participation: Only 44.1% of teachers have received formal digital TLA training, revealing a primary capacity-building need.

- Training Focus: Training has emphasized the use of LMS, digital material creation, and communication tools, but lacks emphasis on next-generation technologies and inclusivity.

Conclusion

To effectively address the digital TLA challenges at BSU, the institution must invest in infrastructure, develop culturally and linguistically relevant resources, and expand teacher training programs, especially those aligned with modern, inclusive digital education practices.

Section 6: Additional Information Provided by Teachers and Students

This section synthesizes additional qualitative feedback offered by teachers and students at BSU. These insights enrich the quantitative analysis presented in previous sections and further illuminate the needs, expectations, and concerns related to digital teaching, learning, and assessment (TLA).

6.1. Teachers' Responses

Several teachers emphasized the urgent need for comprehensive and continuous training aimed specifically at integrating digital technologies into teaching, learning, and assessment content. They expressed interest in:

- ➢ Retraining courses that focus on both digital pedagogy and technical application of new tools.
- ➢ Support for redesigning courses in line with emerging technological possibilities (e.g., hybrid formats, interactive tools, multimedia content).
- ➢ Opportunities to share best practices among colleagues and develop Armenian-language digital resources to ensure culturally and linguistically inclusive teaching.

Teachers also noted a desire for institutional support and incentives to pursue professional development, citing time constraints and lack of recognition as barriers to engaging in training independently.

6.2. Students' Responses

Students also shared valuable suggestions and observations:

- ➢ 5% of students highlighted the need for new equipment to enhance the digital classroom experience and learning quality.
- ➢ 3% explicitly stated a need for training programs to improve students' digital literacy, while 2.5% wanted intensive classes on using new digital platforms and tools.
- ➢ Another 3% of respondents proposed the creation of flexible learning models, blending online and face-to-face formats to better accommodate their personal learning preferences.
- ➢ Similarly, 2.5% expressed interest in more reflective and skill-oriented online testing methods, as current assessments often do not fully capture their competencies.
- ➢ 2.5% recommended the use of gamification and interactive methods, noting these significantly boost motivation and engagement in class.
- ➢ An equal percentage suggested increasing use of audiovisual digital tools to support a more inclusive, accessible educational environment.
- ➢ About 2% expressed a desire to pursue fully online degrees from abroad, indicating interest in transnational, flexible digital education pathways.
- ➢ Lastly, 2.5% of students mentioned wanting access to national library resources, despite their availability, suggesting a gap in awareness of existing digital services.

Conclusions and Recommendations

1. Identify Specific Digital Competences to Be Developed

Based on the comparative analysis and stakeholder feedback, BSU should focus on developing the following digital competencies:

- ➢ For teachers: Digital content creation, course redesign for hybrid formats, inclusive and accessible digital pedagogy, and use of emerging technologies.
- ➢ For students: Digital literacy, platform navigation (e.g., LMS), multimedia engagement, and self-directed learning with interactive resources.

Both groups emphasized the need for interactive, inclusive, and competency-aligned digital learning environments.

2. Outline Technologies and Facilities Requiring Enhancement

BSU must address several key infrastructure and technology gaps:

- ➢ Upgrade outdated equipment and internet infrastructure to support real-time communication, assessments, and multimedia integration.
- ➢ Improve access to personal computing devices and create digital lending schemes for students.
- ➢ Expand access to AI-powered tools, interactive whiteboards, and assistive technologies (e.g., speech-to-text).
- ➢ Invest in localized platforms with Armenian-language interface and resources.

Current reliance on basic tools must be shifted toward a balanced ecosystem of foundational and emerging technologies.

3. Specify Types of Study Materials to Be Developed

While traditional materials (e.g., textbooks, lecture notes) remain highly valued, there is growing demand for:

- ➢ Gamified learning modules and multimedia content (videos, narrated slides, audio).
- ➢ Armenian-language digital resources, especially in subject-specific areas.
- ➢ Interactive assessments with immediate feedback and competency tracking.
- ➢ Collaborative content (e.g., online wikis, shared documents).
- ➢ Materials that support blended and self-paced learning formats.

4. Propose Strategies to Overcome Digital TLA Barriers

To address obstacles hindering digital TLA, the following strategies are recommended:

A. Strengthen Infrastructure and Equipment Access

- ➢ Modernize classrooms with hybrid-ready technologies.

➢ Launch student-centered device lending and internet subsidy programs.

B. Expand and Incentivize Teacher Training

➢ Provide tiered, modular training programs including:
➢ AI and emerging technologies
➢ Accessibility and inclusive design (e.g., Universal Design for Learning)
➢ Hybrid and online course development

➢ Recognize teacher participation through micro-credentials and peer networks.

C. Support Student Digital Literacy

➢ Organize orientation workshops and peer-led digital support hubs.

➢ Disseminate guides and how-to resources on underused tools.

D. Prioritize Accessibility and Communication Tools

➢ Scale up the use of chat platforms, discussion boards, and instant feedback systems.

➢ Invest in speech-to-text, text-to-speech, and inclusive design practices.

E. Localize and Enrich Content

➢ Fund content creation projects in Armenian.

➢ Integrate open educational resources, MOOCs, and interactive platforms into curricula.

F. Pilot Emerging Technologies

➢ Identify flagship courses or departments to test AI-driven feedback tools, VR experiences, or gamified assessments.

G. Improve Communication and Awareness

➢ Raise visibility of existing resources like the centralized and national libraries.

➢ Implement a student-teacher digital advisory board to share feedback and co-develop solutions.

Summary

To successfully transform digital teaching, learning, and assessment at BSU:

➢ Bridge skill gaps through targeted training for both teachers and students.

➢ Invest in inclusive infrastructure, modern devices, and Armenian-language resources.

➢ Foster innovation by piloting new tools and supporting flexible learning models.

➢ Promote awareness, access, and feedback loops to ensure all stakeholders are informed, empowered, and engaged.

By aligning institutional strategy with real user needs, BSU can build a future-ready, inclusive digital ecosystem that supports high-quality education for all.

Appendix: Temperature Map Analysis of Response Patterns

Analysis of Teacher and Student Responses

For questions 2.2, 3.2, and 4.2, temperature maps have been generated and analyzed to reveal deeper insights into the response patterns of both teaching staff and students. This visualization approach reveals nuanced patterns that might otherwise remain hidden in conventional data analysis.

Response Reliability Assessment

The analytical methodology includes calculation of relative response reliability for each participant group. This metric accounts for response bias by adjusting for instances where respondents selected identical options across multiple items - a pattern that may indicate disengagement rather than authentic responses.

Comparative Results

The reliability findings for both respondent groups appear in Figures 2.2, 3.2, and 4.2. The table below summarizes these results, presenting the percentage of responses deemed reliable after applying the uniform-response adjustment algorithm. These percentages reflect the proportion of responses that demonstrate meaningful engagement with the questions, after filtering out potentially automated or disengaged response patterns.

Question ID	Teaching Staff	Students
2.2	82.4 %	93.8 %
3.2	88.2 %	87.5%
4.2	85.3 %	87.5 %

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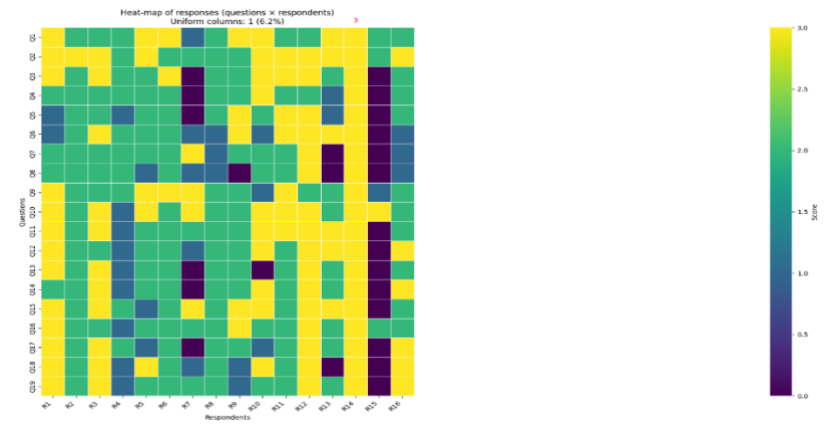## 2.2. Level of need for developing the digital competencies and technologies

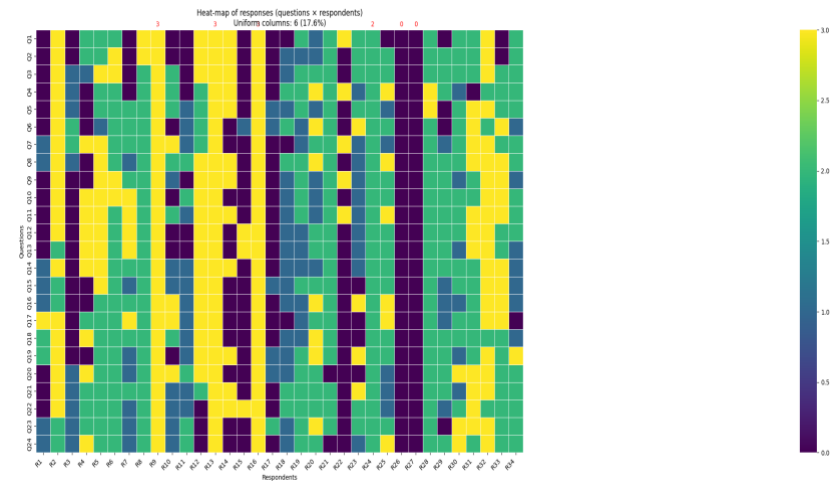Fig. 2.2.1: Students responses

Fig. 2.2.2: Teachers responses

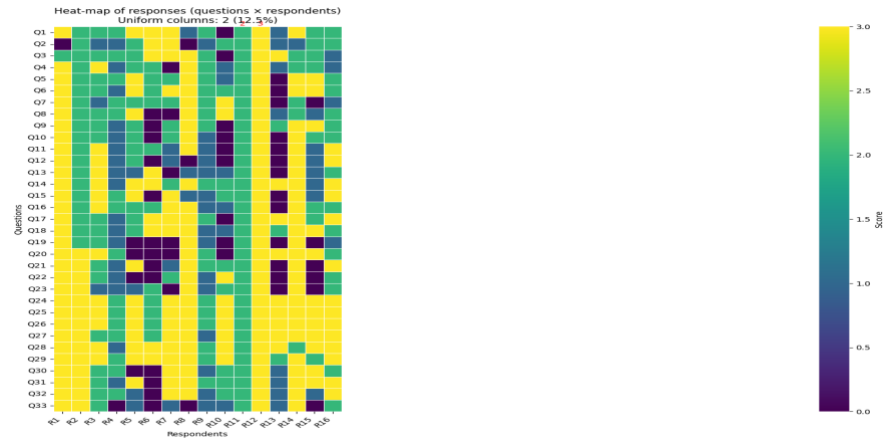## 3.2. Usefulness of the technologies & facilities supporting digital TLA
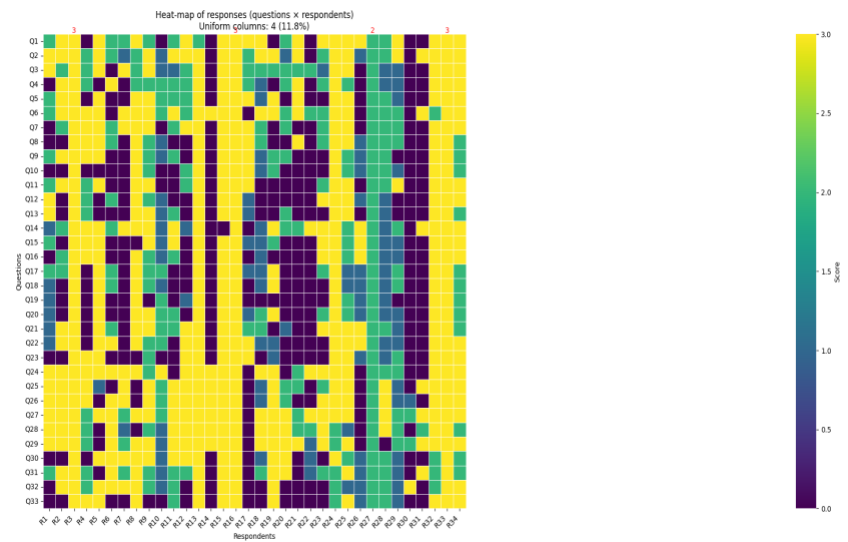

Fig. 3.2.1: Students responses

Fig. 3.2.2: Teachers responses

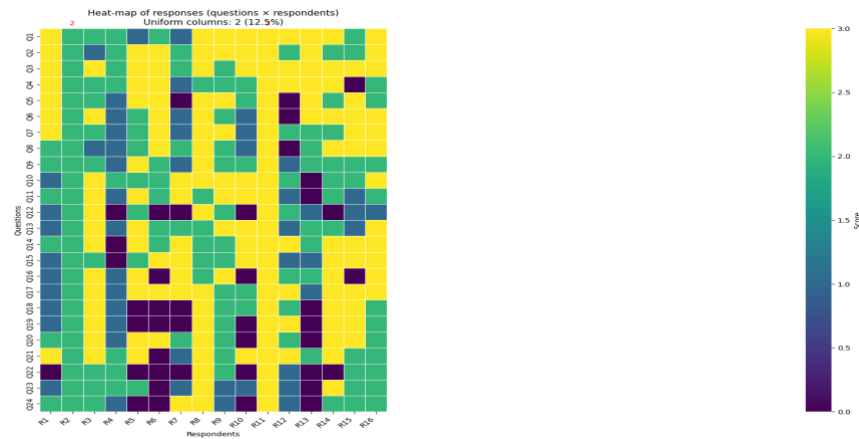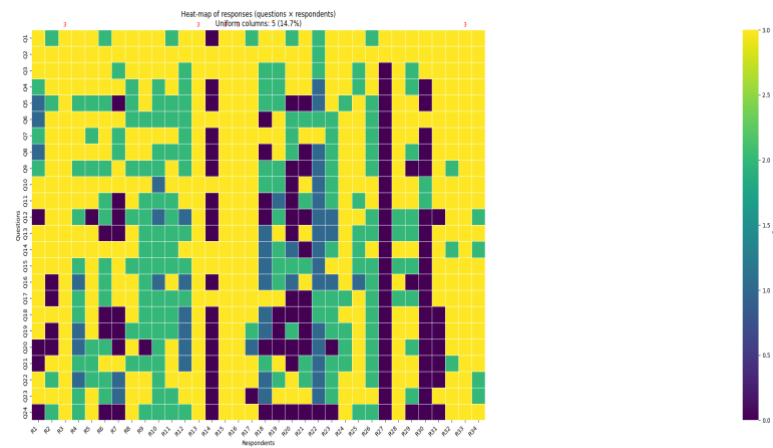## 4.2. Usefulness of the study materials for TLA

Fig 4.2.1: Students responses

Fig 4.2.2: Teachers responses

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