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ENTREPRENEUR'S
SKILLS CERTIFICATE

STUDY REPORT ERASMUS +

MASTERS

March 2016

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Landes Berufs Schule MURAU lbs-murau.steiermark.at

KAUFMÄNNISCHE SCHULE GÖPPINGEN

Střední škola průmyslová, technická a automobilní Jihlava

EXECUTIVE SUMMARY

Target group
Of the total of 346 respondents, 83.8% were male and only 16.2% were female which can attributed to the fact that the selected target group is made up of students of secondary vocational schools for professions that are often characterized as male-dominated. The majority of online survey respondents, i.e. 41.3% of them, come from the Czech Republic, while the rest of them coming from Austria and Germany were equally represented with 31.5 and 27.2%, respectively. The respondents were aged between 14-21 years, with an average age being 17.2 years. Nine in 10 respondents described themselves as intermediate or advanced mobile device users.

Mobile device ownership
98% of the respondents own some type of a mobile device. Smartphones and laptops are most common with 94% and 73.7%, respectively. 41% of the respondents own a tablet. On average, respondents spend 5.6 hours a day using a smartphone, 3.8 hours using a laptop and 2.4 hours using a tablet. 66% have Android OS on their smartphones, and 24% have iOS. 68.2% use laptops running Windows. Three in four respondents report that a smartphone is their primary mobile device while 18.5% said the same for their portable computers.

Mobile device usage
Nine in 10 respondents use their mobile devices almost constantly or several times a day. They report using their smartphones throughout the whole day and portable computers in the early evening hours. The respondents prefer to use Wi-Fi Internet connection. 98% of them have Wi-Fi at home and 62.1% prefer to connect to the Internet through school's Wi-Fi although they have some sort of a mobile data plan. They access online content using a mobile web browser and mobile apps almost equally often with a slight advantage indicated for mobile web browsers with 55% in comparison to 42% using mobile apps.

M-learning experiences
One third of the respondents have come across some type of ICT-assisted education before. Most experiences are connected with learning a foreign language, attending driving school, using Moodle LMS, or taking online courses. 76% of those who have had previous experience with ICT-assisted instruction described it as positive or very positive. 63% of all respondents agree or strongly agree that m-learning will have a significant role in education in the future.

EXECUTIVE SUMMARY

Attitude towards m-learning

When rating barriers to the use of mobile learning, most respondents fall in the category “neither agree nor disagree”. This can be attributed to the fact that they do not have extensive previous experience with ICT-assisted instruction. On the other hand, most of them find that the benefits of m-learning are that it makes it easier to access coursework, increases their knowledge in their field of study as well as their motivation. Around 60% of them believe that a progress report/notifications would be a crucial factor in deciding to use an m-application again. Another motivational factor would be if their friends/colleagues started using the app.

Mobile app feature preferences

When rating attributes of apps that they normally use, appealing design, interactivity and making life easier were given the highest importance. They rated entertainment-related as well as social and communication categories as important and very important. When asked to choose which features they would like to have integrated into an m-learning app, the respondents predominantly chose comparing the results with their colleagues, forum/chat and social (like, share, comment, post, etc.). In terms of their preferences with regard to the type of app they think would help improve their learning experience, quizzes, tutorials, best practice/case studies, and game-based apps were equally scored.

Comparative analysis #1

Between compared schools, differences were found in the following questions: Q1, Q8, Q10, Q13 and Q25. In Q1 difference was detected in GER school where female students equally participated in survey as their male colleagues (m=46, f=48), in contrast, CZ had only 8 female students that participated and AT none. In Q8 37% of students in CZ choose laptop for their primary mobile device, while GER and AT where both around 9% when answering same question. In Q10 84% of GER students responded they do not go online using school Wi-Fi in comparison to CZ 17,5% and AT with 24,8%.

Comparative analysis #2

In Q13, when asked Have you come across any type of ICT-assisted education/ instruction before, data shows that CZ students have most experience while students from AT the least. When analysing Q25 we found that CZ students would prefer game based m-learning app, GER students opted for tutorials and AT students best practise app type. Other questions were cross examined also, but findings were mostly homogenous, which is important when building m-learning app that accommodates student needs and expectations concerning design and performance of the app.

BACKGROUND & RESEARCH METHODOLGY

Background

This report is a part of the Masters project. Masters stands for Mobile Application for Skills Training in EntRepreneurShip.
Its main objective is to increase the labour market relevance of VET, promote entrepreneurship education and social entrepreneurship among young people and enhance digital integration in learning, teaching, training, and youth work at various levels.

The study involves a qualitative and quantitative survey carried out with an aim to develop tailor-made solutions for the target group.

Methodology

Online survey

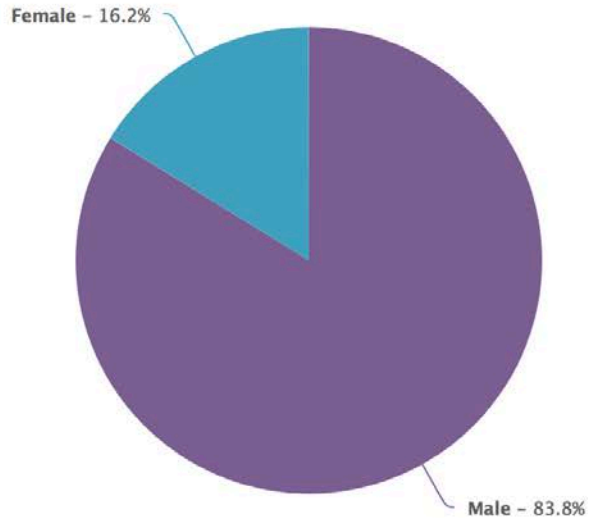
A total of 346 respondents aged 14–21 have completed an online survey focused on exploring students' mobile device usage habits, their attitudes towards education in the context of mobile application support and preferences with regard to mobile learning application features.
The study was fielded between January 20th and February 5th, 2016 on three locations (CZ, AT, GER).
The sample is non-random and purposive as it was predefined by the project proposition and by the choice of project partners.

Expert interviews

World Café was used as a platform for conducting expert interviews with project stakeholders (teachers, principals, parents, developers).
The interviews were organised at three locations. They consisted of 5 questions.

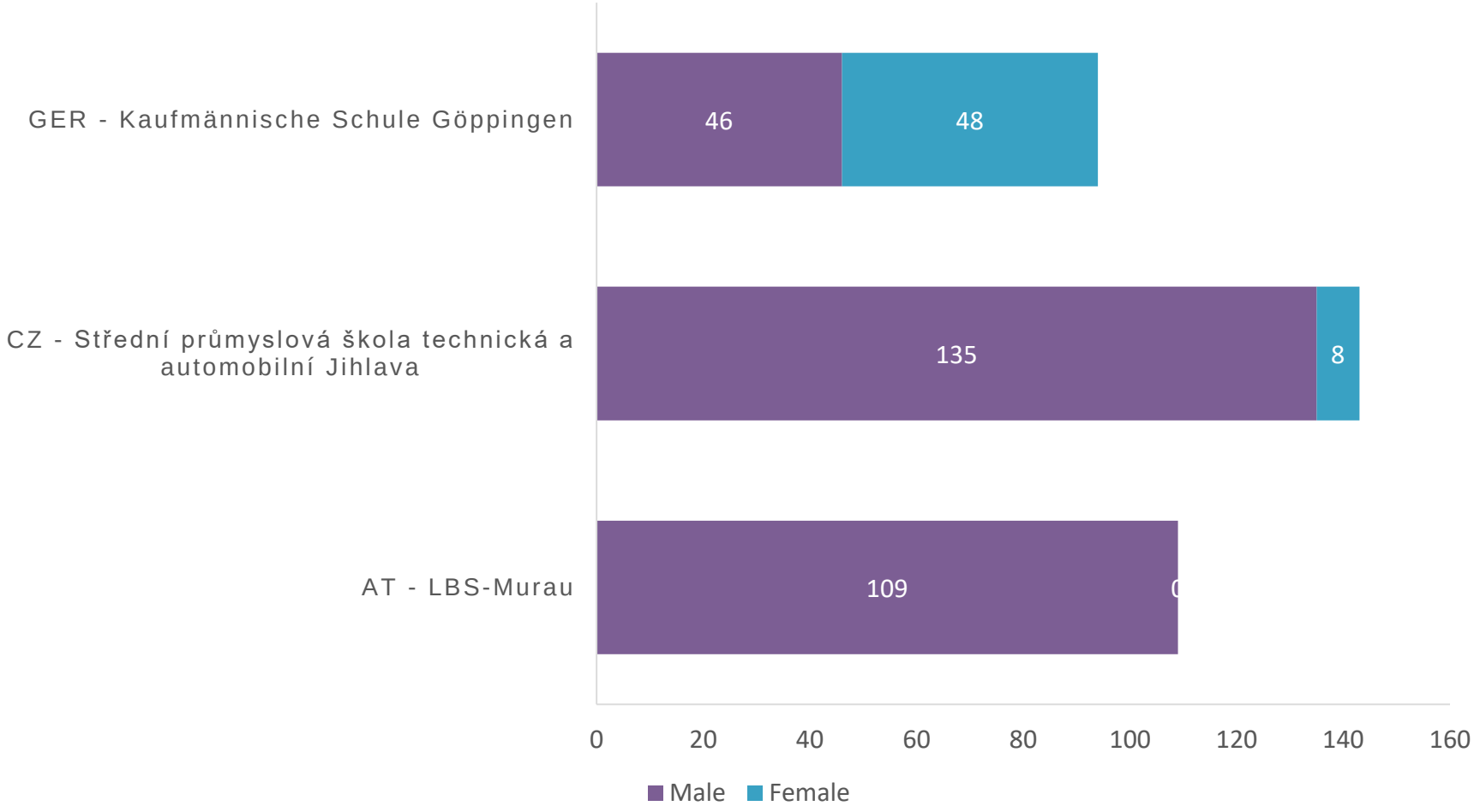
RESULTS

- Demographics
- Ownership of mobile devices
- Mobile device and internet usage
- Attitude and preferences in m-learning
- Expert interviews

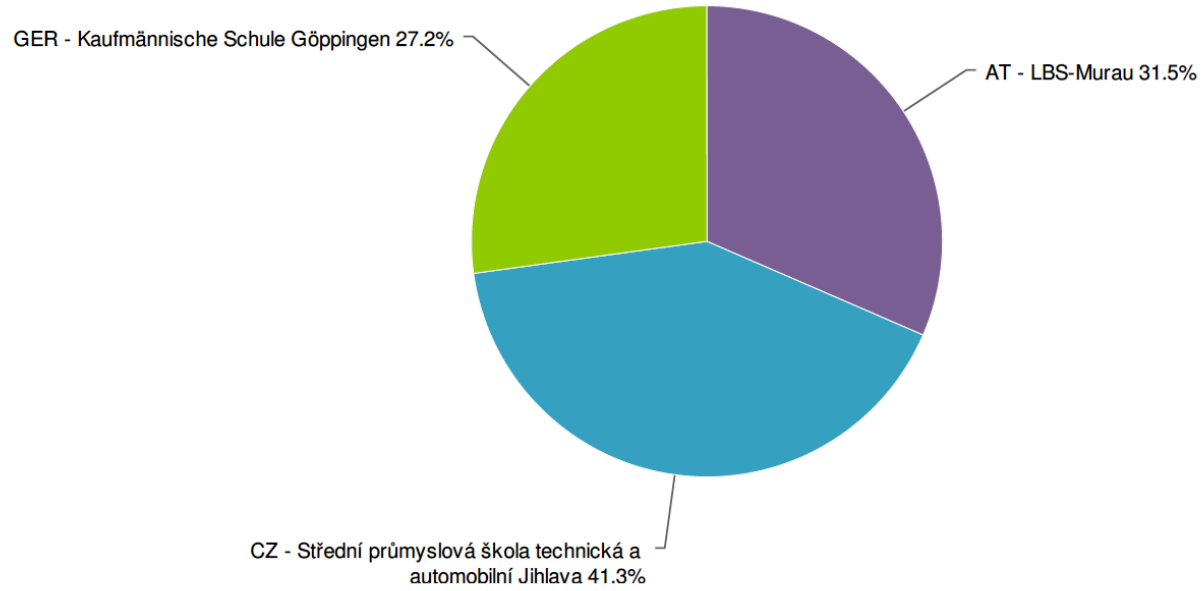


Value	Percent	Count
Male	83.8%	290
Female	16.2%	56
	Total	346

Erasmus + MASTERS Q1: Gender
Base: Total respondents (n=346)



Erasmus + MASTERS Q1 (Comparison by schools/country): Gender
Base: AT (n=109), CZ (n=143), GER (n=94)



Value	Percent	Count
AT - LBS-Murau	31.5%	109
CZ - Střední průmyslová škola technická a automobilní Jihlava	41.3%	143
GER - Kaufmännische Schule Göppingen	27.2%	94
	Total	346

Erasmus + MASTERS Q2: Which school do you attend?
Base: Total respondents (n=346)

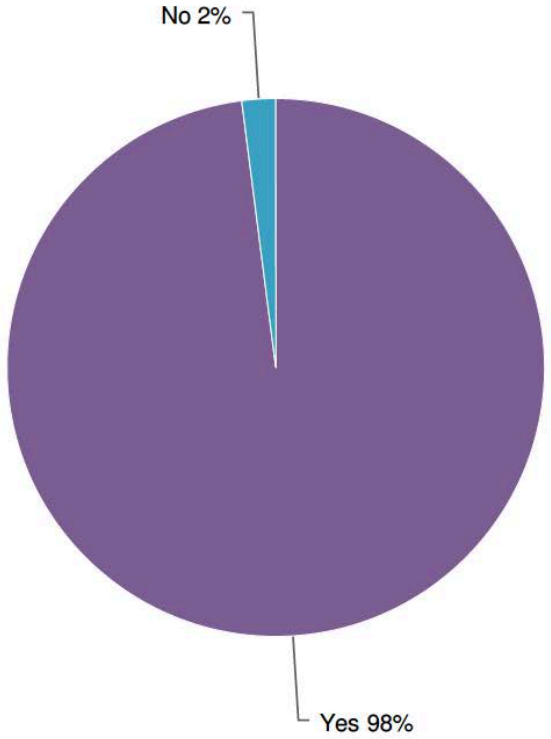
Value	Percent	Count
14	2.9%	10
15	3.8%	13
16	20.2%	70
17	33.0%	114
18	26.6%	92
19	9.5%	33
20	1.7%	6
21	2.3%	8
	Total	346

Statistics	
Sum	5,964.0
Average	17.2
StdDev	1.3
Max	21.0

Erasmus + MASTERS Q3: Age?
Base: Total respondents (n=346)

Value	Percent	Count
Novice: I have been using a mobile device for less than six months and have only a few apps installed. I use my mobile device for calls, texting, and e-mail.	2.3%	8
Intermediate: I have been using a mobile device for more than six months. I occasionally download apps when I have a need or when my friends recommend something new.	23.1%	80
Advanced: I have been using a mobile device for 2+ years and have installed and used a variety of different apps. I often install many of the same type of apps to evaluate differences and make recommendations to my friends about the best ones.	67.9%	235
Expert: I have developed my own mobile apps.	6.7%	23
	Total	346

Erasmus + MASTERS Q15: Which of the following profiles best describes you as a mobile device user?
Base: Total respondents (n=346)



Value	Percent		Count
Yes	98.0%		339
No	2.0%		7
		Total	346

Erasmus + MASTERS Q4: Do you own a mobile device?
Base: Total respondents (n=346)

	Yes	No	I have not heard of this device	Responses
Smartphone	**325** 93.9%	**18** 5.2%	**3** 0.9%	346
Non-smartphone	**27** 7.8%	**242** 69.9%	**77** 22.3%	346
Tablet	**142** 41.0%	**187** 54.0%	**17** 4.9%	346
Phablet	**19** 5.5%	**230** 66.5%	**97** 28.0%	346
Portable computer/laptop	**255** 73.7%	**80** 23.1%	**11** 3.2%	346

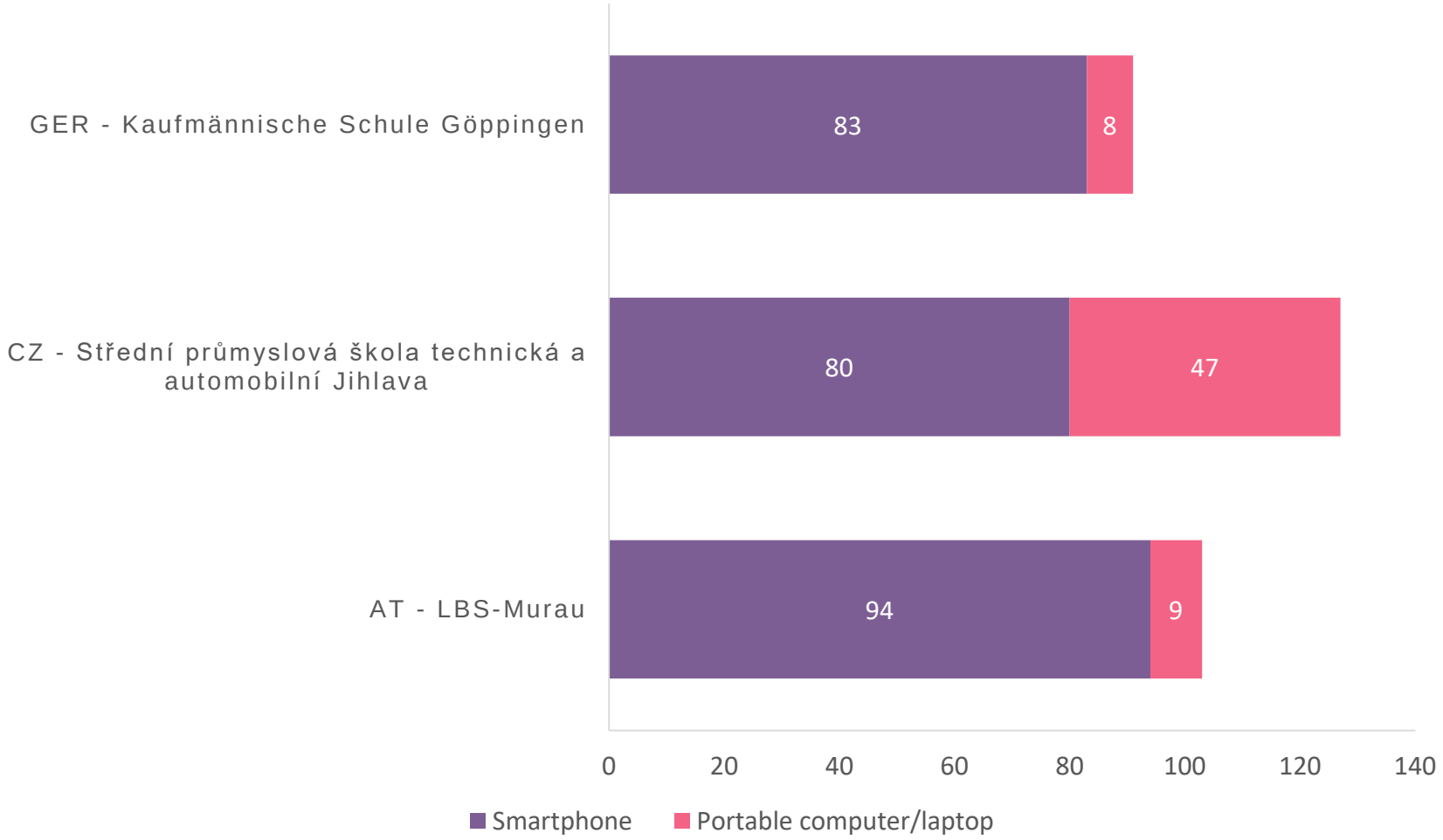
Erasmus + MASTERS Q5: Which of the following mobile devices do you own?
Base: Total respondents (n=346)

	iOS / OS X	Android / Chrome	Windows	Other	I don't have it	Responses
Smartphone	**83** 24.0%	**228** 65.9%	**9** 2.6%	**5** 1.4%	**21** 6.1%	346
Tablet	**40** 11.6%	**87** 25.1%	**9** 2.6%	**5** 1.4%	**205** 59.2%	346
Phablet	**5** 1.4%	**17** 4.9%	**2** 0.6%	**2** 0.6%	**320** 92.5%	346
Portable computer/laptop	**13** 3.8%	**7** 2.0%	**236** 68.2%	**4** 1.2%	**86** 24.9%	346

Erasmus + MASTERS Q7: Which operating system does your particular mobile device use?
Base: Total respondents (n=346)

Value	Percent	Count
Smartphone	74.3%	257
Non-smartphone	0.3%	1
Tablet	3.5%	12
Phablet	2.6%	9
Portable computer/laptop	18.5%	64
I don't have it	0.9%	3
	Total	346

Erasmus + MASTERS Q8: Which of the following devices would you call your primary mobile device (one you use the most)?
Base: Total respondents (n=346)



Erasmus + MASTERS Q8 (Comparison by schools/country): Which of the following devices would you call your primary mobile device (one you use the most)?
Base: AT (n=103), CZ (n=127), GER (n=91)

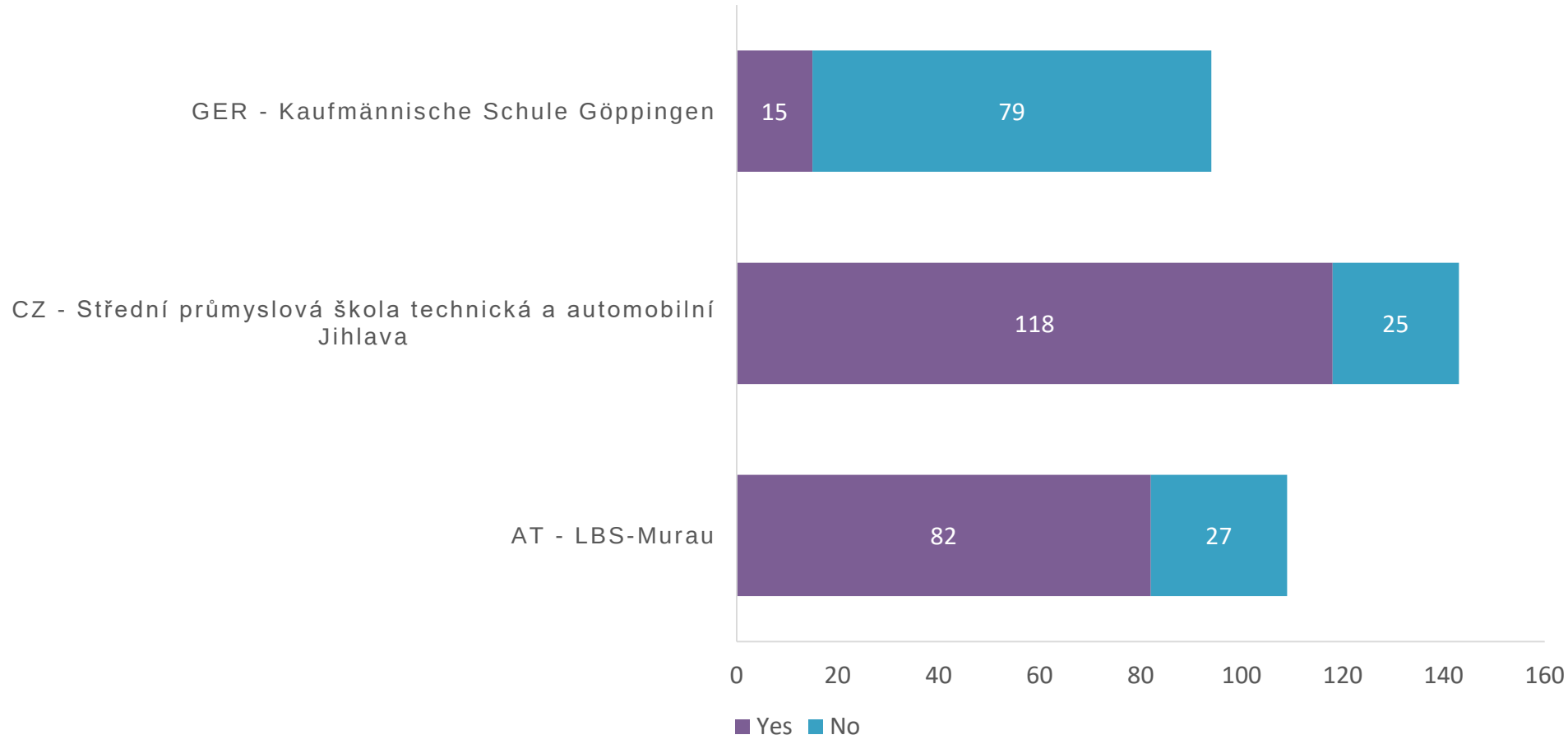
Erasmus + MASTERS Q6: How many hours a day, on average, do you spend on any of the following mobile devices?
Base: From total respondents depending on ownership: Smartphone (n=327), Tablet (n=108), Laptop (n=232)

	Early morning 7:00-10:00	Late morning/afternoon 10:00-17:00	Early evening 17:00-20:00	Prime time 20:00-22:00	Night 22:00-24:00	I don't have it	Responses
Smartphone	**72** 20.8%	**105** 30.3%	**61** 17.6%	**73** 21.1%	**12** 3.5%	**23** 6.6%	346
Non-smartphone	**3** 0.9%	**4** 1.2%	**5** 1.4%	**2** 0.6%	**0** 0.0%	**332** 96.0%	346
Tablet	**12** 3.5%	**24** 6.9%	**42** 12.1%	**40** 11.6%	**14** 4.0%	**214** 61.8%	346
Phablet	**4** 1.2%	**7** 2.0%	**5** 1.4%	**6** 1.7%	**1** 0.3%	**323** 93.4%	346
Portable computer	**6** 1.7%	**49** 14.2%	**100** 28.9%	**56** 16.2%	**15** 4.3%	**120** 34.7%	346
Desktop	**3** 0.9%	**27** 7.8%	**57** 16.5%	**29** 8.4%	**12** 3.5%	**218** 63.0%	346

Erasmus + MASTERS Q9: At what time of the day do you most commonly go online using a specific device?
Base: Total respondents (n=346)

	Yes	No	Responses
At home (Wi-Fi)	**339** 98.0%	**7** 2.0%	346
At school (Wi-Fi)	**215** 62.1%	**131** 37.9%	346
Public access points (Wi-Fi)	**144** 41.6%	**202** 58.4%	346
Everywhere (Mobile data plan 3G/4G) – limited	**153** 44.2%	**193** 55.8%	346
Everywhere (Mobile data plan 3G/4G) - unlimited	**125** 36.1%	**221** 63.9%	346

Erasmus + MASTERS Q10: How do you go online?
Base: Total respondents (n=346)



Erasmus + MASTERS Q10 (Comparison by schools/country): How do you go online – at school wi-fi?
Base: AT (n=109), CZ (n=143), GER (n=94)

Value	Percent	Count
Almost constantly	45.4%	157
Several times a day	45.4%	157
About once a day	4.1%	14
Several times a week	2.6%	9
Once a week	0.6%	2
Less than once a week	2.0%	7
	Total	346

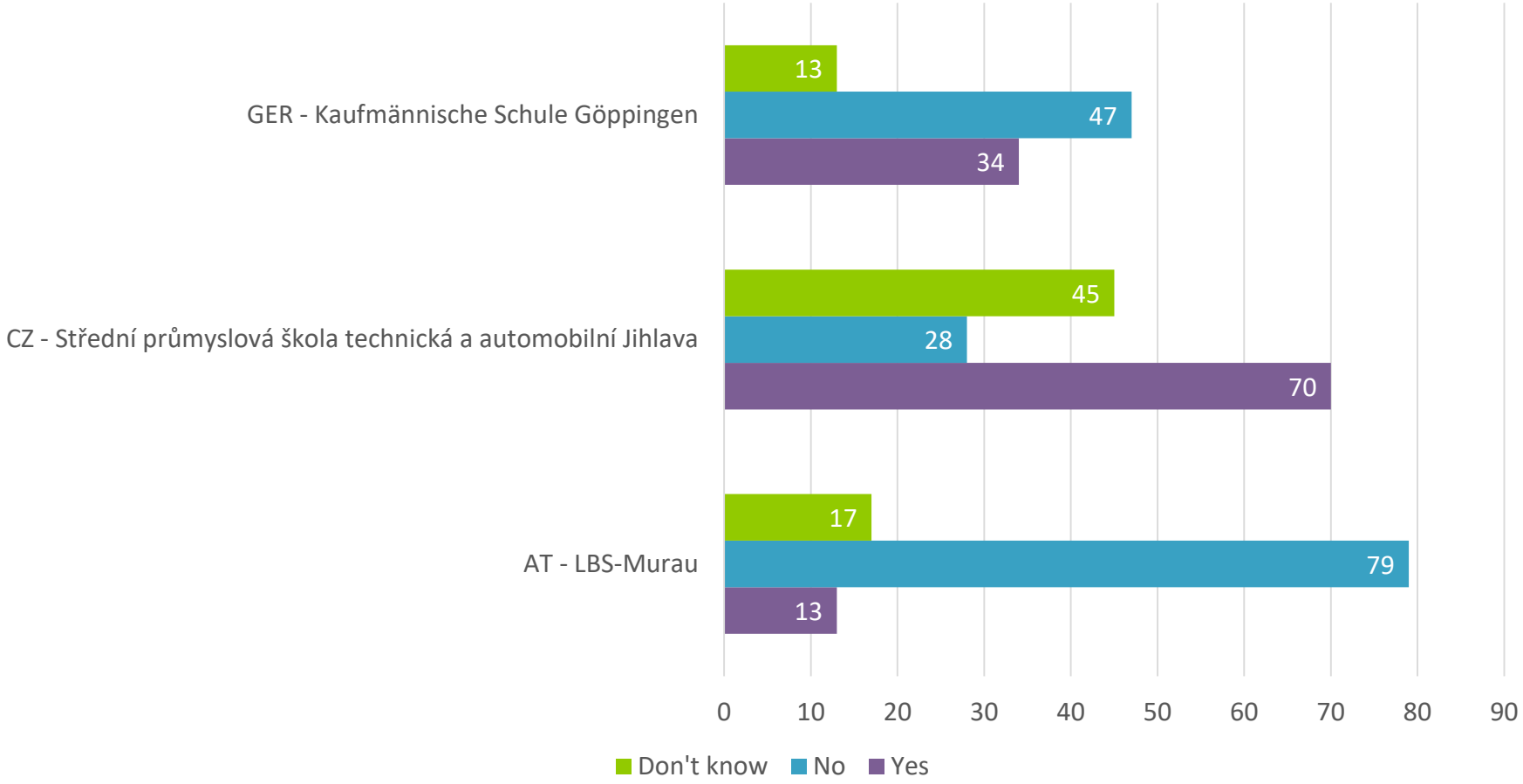
Erasmus + MASTERS Q11: How often do you go online using mobile devices (all mobile devices you own)?
Base: Total respondents (n=346)

Value	Percent	Count
Using a mobile application	41.9%	145
Mobile web / browser (Safari, Chrome, Opera, Firefox, Internet Explorer)	54.9%	190
I don't have it	3.2%	11
	Total	346

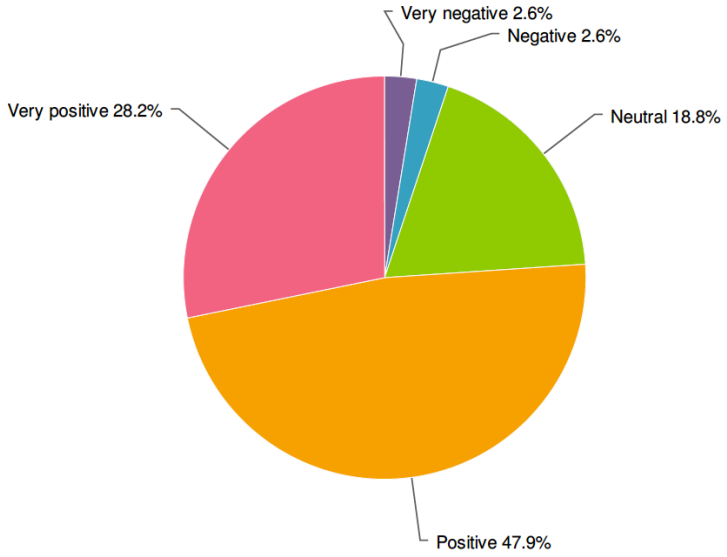
Erasmus + MASTERS Q12: How do you, most commonly, access online content on your mobile device?
Base: Total respondents (n=346)

Value	Percent	Count
Yes (please describe your experience briefly)	33.8%	117
No	44.5%	154
I don't know	21.7%	75
	Total	346

Erasmus + MASTERS Q13: Have you come across any type of ICT-assisted education/ instruction before?
Base: Total respondents (n=346)

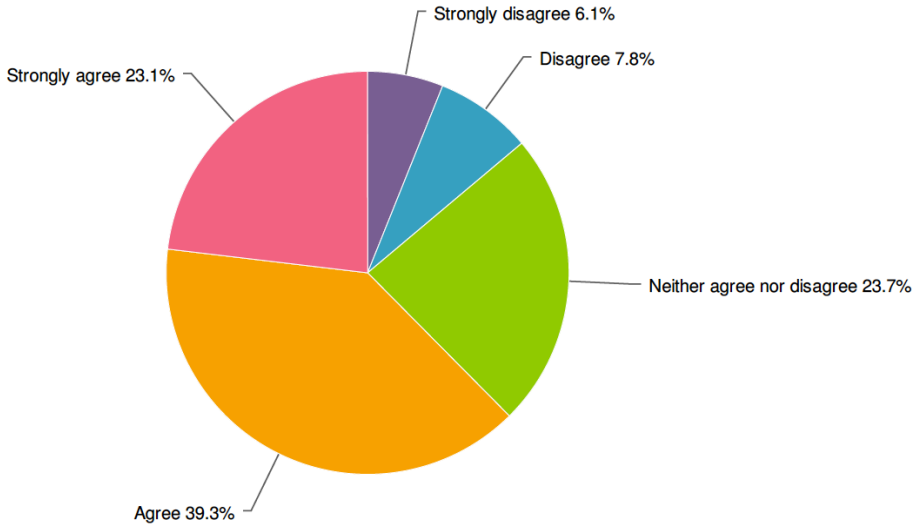


Erasmus + MASTERS Q13 (Comparison by schools/country): Have you come across any type of ICT-assisted education/ instruction before?
Base: AT (n=109), CZ (n=143), GER (n=94)



Value	Percent	Count
Very negative	2.6%	3
Negative	2.6%	3
Neutral	18.8%	22
Positive	47.9%	56
Very positive	28.2%	33
	Total	117

Erasmus + MASTERS Q14: How would you rate the experience described?
Base: From total respondents, the ones that came across some kind of ICT ICT-assisted education/ instruction before (n=117)



Value	Percent	Count
Strongly disagree	6.1%	21
Disagree	7.8%	27
Neither agree nor disagree	23.7%	82
Agree	39.3%	136
Strongly agree	23.1%	80
	Total	346

Erasmus + MASTERS Q16: To what extent do you agree with the following statement? M-learning will have a significant role in the education in the future.
Base: Total respondents (n=346)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Responses
Lack of training	**58** 16.8%	**70** 20.2%	**118** 34.1%	**81** 23.4%	**19** 5.5%	346
Lack of connectivity	**45** 13.0%	**86** 24.9%	**102** 29.5%	**83** 24.0%	**30** 8.7%	346
Lack of devices	**72** 20.8%	**99** 28.6%	**106** 30.6%	**57** 16.5%	**12** 3.5%	346
Lack of digital educational content	**36** 10.4%	**63** 18.2%	**132** 38.2%	**83** 24.0%	**32** 9.2%	346
Poor school administration	**33** 9.5%	**48** 13.9%	**141** 40.8%	**79** 22.8%	**45** 13.0%	346
Negative student attitudes	**74** 21.4%	**89** 25.7%	**126** 36.4%	**39** 11.3%	**18** 5.2%	346
Lack of pedagogical justification	**34** 9.8%	**52** 15.0%	**159** 46.0%	**66** 19.1%	**35** 10.1%	346

Erasmus + MASTERS Q17: To what extent do you agree that each of the following reasons is a barrier to the use of mobile learning?
Base: Total respondents (n=346)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Responses
Makes it easier to access coursework	**21** 6.1%	**19** 5.5%	**69** 19.9%	**138** 39.9%	**99** 28.6%	346
Increases communication with other students	**29** 8.4%	**42** 12.1%	**101** 29.2%	**100** 28.9%	**74** 21.4%	346
Increases communication with instructors	**36** 10.4%	**68** 19.7%	**128** 37.0%	**75** 21.7%	**39** 11.3%	346
Increases my knowledge in my field of study	**23** 6.6%	**18** 5.2%	**88** 25.4%	**145** 41.9%	**72** 20.8%	346
Improves my quality of work	**25** 7.2%	**41** 11.8%	**130** 37.6%	**93** 26.9%	**57** 16.5%	346
Increases motivation to complete coursework	**35** 10.1%	**44** 12.7%	**118** 34.1%	**94** 27.2%	**55** 15.9%	346

Erasmus + MASTERS Q18: To what extent do you agree that the following are the benefits of using mobile apps / devices in education?
Base: Total respondents (n=346)

	Completely unimportant	Not important	Moderately important	Important	Very important	Responses
Incentives (stars/nuggets, it makes passing the exams easier; the advancement to new lessons is easier…)	**37** 10.7%	**53** 15.3%	**129** 37.3%	**87** 25.1%	**40** 11.6%	346
Exclusive / bonus content	**29** 8.4%	**61** 17.6%	**141** 40.8%	**86** 24.9%	**29** 8.4%	346
Progress report / notifications	**15** 4.3%	**25** 7.2%	**96** 27.7%	**122** 35.3%	**88** 25.4%	346
Friends / colleagues start using the app	**23** 6.6%	**37** 10.7%	**128** 37.0%	**119** 34.4%	**39** 11.3%	346
Unlocking new in-app content	**24** 6.9%	**40** 11.6%	**138** 39.9%	**91** 26.3%	**53** 15.3%	346

Erasmus + MASTERS Q19: Rate the importance of the following factors in deciding to use m-learning applications again.
Base: Total respondents (n=346)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Responses
Making life easier	**27** 7.8%	**25** 7.2%	**102** 29.5%	**125** 36.1%	**67** 19.4%	346
Clear instructions for using the app	**20** 5.8%	**45** 13.0%	**150** 43.4%	**96** 27.7%	**35** 10.1%	346
Appealing design and aesthetic	**21** 6.1%	**17** 4.9%	**94** 27.2%	**149** 43.1%	**65** 18.8%	346
Consistent experience on multiple devices	**16** 4.6%	**24** 6.9%	**119** 34.4%	**134** 38.7%	**53** 15.3%	346
Always has new content	**16** 4.6%	**28** 8.1%	**108** 31.2%	**125** 36.1%	**69** 19.9%	346
Interactivity	**14** 4.0%	**15** 4.3%	**145** 41.9%	**124** 35.8%	**48** 13.9%	346

Erasmus + MASTERS Q22: Thinking about the apps that you use frequently and those that you do not use very often or at all, to what extent do you agree or disagree that the following attributes are true of apps that you use more frequently?
Base: Total respondents (n=346)

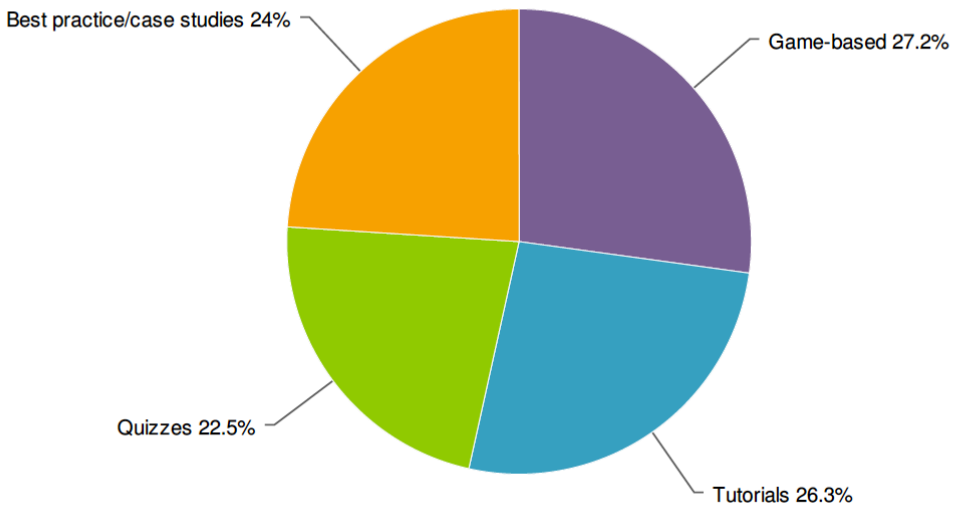
	Completely unimportant	Not important	Moderately important	Important	Very important	Responses
Media or entertainment-related (news, listening to music, etc.)	**22** 6.4%	**27** 7.8%	**63** 18.2%	**131** 37.9%	**103** 29.8%	346
Social and communication (Facebook, Instagram, Snapchat, WhatsApp, Viber, etc.)	**26** 7.5%	**30** 8.7%	**90** 26.0%	**92** 26.6%	**108** 31.2%	346
Games or game-related	**41** 11.8%	**59** 17.1%	**118** 34.1%	**77** 22.3%	**51** 14.7%	346
Educational	**27** 7.8%	**30** 8.7%	**106** 30.6%	**115** 33.2%	**68** 19.7%	346
Productivity (planner, notes, calendar, calculator, etc.)	**21** 6.1%	**40** 11.6%	**104** 30.1%	**101** 29.2%	**80** 23.1%	346
Sport & Health	**33** 9.5%	**46** 13.3%	**115** 33.2%	**95** 27.5%	**57** 16.5%	346

Erasmus + MASTERS Q23: Rate the importance of the following categories of m-applications
Base: Total respondents (n=346)

Value	Percent	Count
Social (share, comment, like, post, etc.)	64.2%	222
Forum / chat	70.5%	244
Comparing the results with colleagues	75.1%	260
Geo-location features (location sharing, check-in feature)	24.0%	83
QR code (a machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.)	30.9%	107
Other	8.7%	30
	Total	346

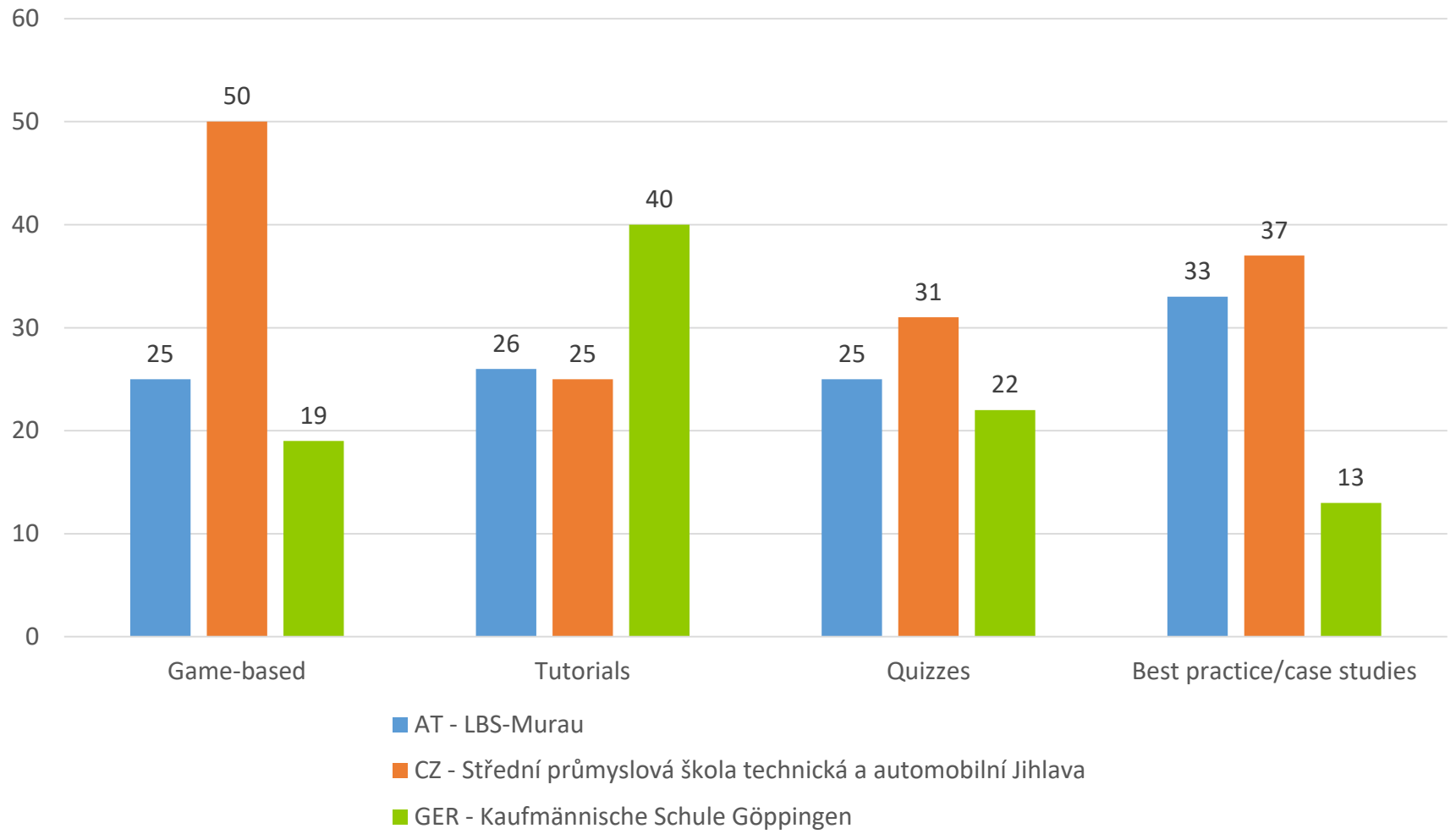
Statistics	
Sum	11.0
StdDev	2.5
Max	7.0

Erasmus + MASTERS Q24: Which features would you like to have integrated into an m-learning application?
Base: Total respondents (n=346)



Value	Percent	Count
Game-based	27.2%	94
Tutorials	26.3%	91
Quizzes	22.5%	78
Best practice/case studies	24.0%	83
	Total	346

Erasmus + MASTERS Q25: What type of m-learning app would you prefer in bettering your learning experience?
Base: Total respondents (n=346)



Erasmus + MASTERS Q25 (Comparison by schools/country): What type of m-learning app would you prefer in bettering your learning experience?
Base: AT (n=109), CZ (n=143), GER (n=94)

- Good for economic subjects
- **Combination with traditional teaching methods**
- Cheap/free and easy to use
- **Beneficial if it can be accessed from all devices**
- Flexibility of online content – content update
- Graded, if it‘s possible to work with own mobile devices - operated like QuizClash - motivating
- If its complementary to school material – good for support
- Always available– studying/leisure time blend together/dilute
- Yes, necessary. New possibility , makes learning more interesting
- **Involve the pupils‘ knowledge, subject-specific + Media competence**
- Interchange with other teacher– learn from experience
- Contribution : as a teacher; don‘t be afraid, just do it
- **Contribution : being open to adapt new methods**

- **Wi-fi and mobile technology availability, no educational apps, functionalities of each mobile**
- Hard to make all students join
- **Not allowed to use smartphones in class - only for homework - research**
- Not necessary but helpful
- **Not necessarily to reach educational objective**

Obstacles and conditions for implementation

- Attitude of teachers
- Lack of quality apps
- **Incompatibility of iOS and Android**
- Lack of info about existing apps
- **Lack of training for teachers**
- Students – not every student can afford
- **Internet connectivity**
- Disunited apps – standardization
- Age gap teachers – students
- Unwillingness to learn new things
- Possibility of linkage in the teaching plan/lesson plan
- Lack of expert knowledge for technical and didactical implementation
- Measures of self-education linked to an interest of teachers unclear
- **Budget of pupils may not be strained**
- Media competence of teachers and pupils
- Checkable test results (in LMS)
- **Motivational discrepancy**
- Support: how will users questions be answered
- Linkage to existing systems / Devices: Example. E-Portfolio MAHARA
- **Integration of the application into the existing curricula unclear , capacity of the teachers already exhausted, application should be designed to avoid additional work , no additional burden for the teachers**
- Individual learning speed – no comparison possible

Erasmus + MASTERS Q2: What do you see as the biggest obstacles to the use of mobile learning considering all the stakeholders involved (students, teachers, schools, education system)? / Do all the necessary conditions for the implementation of m-learning concept exist in your school?
Base: Expert interview at World café’s

Learning concepts

- Testing
- Module for personal finances
- Only a complement for lessons
- Transfer of interactivity into lessons
- Making notes
- **Use of social networks** (Exchange of experiences, Social interactions, Like-minded partners, Closed learning group
- **Blended Learning** (Flexible method, Review questions, Good summary possible, Variable forms of learning, Addition to the lesson via applications, Individual learning progress possible, Tests immediately, Feedback immediately, Exercises on the way to school, Additionally motivation, Additionally learning form
- **Cooperation in groups** (Exercises preliminary to exams, Tip of the week)

Erasmus + MASTERS Q3: Which learning concepts would you expect to be achieved with the implementation of mobile learning app?
Base: Expert interview at World café’s

Mobile learning app elements

- **To encourage the competitiveness**
- **To compare the results with other students**
- Story
- Well arranged, with guideposts
- Discreet but entertaining
- Comprehensible
- Not too many clicks through
- **Simple**
- **Intuitive content, interactive, possibility to switch among all parts easily**
- Well manageable, data storage possibility, possibility of supervision, attractive graphics
- App should be free
- Certificate
- Feature for class/school/country competitions
- **Chat**
- Content should have linked sources for further information
- Run offline to prevent distractions
- **High score feature**
- Simulation game
- Push notification
- Printable

Erasmus + MASTERS Q4: Which elements should be used to create a successful/inviting mobile learning app for entrepreneurial skills and why?
Base: Expert interview at World café’s

Teaching methods implementation

- **Learn through games: Scored placement test - Ranking - Final test**
- Interaction features - Teacher, App, Teambuilding
- Videos for motivation
- Visualized learning tracks- popup texts
- Compact learning nuggets
- **Cooperative Elements: partial solutions form whole solution**
- Incentives for regular revision
- Reviewing homework effectively
- **Regular revision of learning content**
- **Individual learning rate**
- Test with content-influenced feedback
- **Peer-Learning**
- **Game based learning**
- **Competitive Learning**
- **Group challenges**
- Economic calculators
- Graphs
- **Brainstorming**
- **Revival of lessons**
- **Problem tasks**
- **Multiple choice tests**
- Practising
- Creative thinking development
- Illustration, imagination
- Mind mapping
- **Practical oriented**
- **Glossary and lexicon for students can improve their basic knowledge fast and easy**
- Wrapping learning content into games and different learning aspects

Erasmus + MASTERS Q5: What teaching methods do you think m-learning can implement and thus improve learning outputs of students/pupils?
Base: Expert interview at World café’s

RECOMMENDATIONS

The mobile application is intended for adolescents aged 14-21 years. The application must be bilingual (Czech and German). The app should be free.

In cooperation with partner schools, ways should be found to ensure that students have quality Wi-Fi Internet connection at all times. Other identified barriers should be removed by training of school staff and students.

The fact that the vast majority of users have opted for a smartphone as their primary mobile device should be taken into account. In order to maximize the reach of m-learning application, it is desirable that the application is available on as many mobile devices as possible. Based on the collected data, we can conclude that a web-based application would be the best solution considering that users have mobile devices with different operating systems.

The positive attitude expressed by the respondents towards m-learning should be taken advantage of by providing visually appealing, intuitive, interactive, and useful applications loaded with educational materials.

RECOMMENDATIONS

The features that were identified as desirable in the research should be integrated in the design of mobile applications. This includes implementing the elements of Web 2.0 concept with expanded communication capabilities, such as forum/chat, share, like, comment, post, etc. The possibility of comparing the results with colleagues is another desirable feature because it encourages competition. Quizzes, tutorials, and best practice/case studies have been reported as the preferred features, which means that the application should make learning fun and preferably be game-based.

Comparison by schools/countries was implemented in the report. Findings serve for informational purposes only because project proposal suggests one m-learning app that caters to averaged needs of participating partner schools.

The mobile app should include some of the following teaching methods: Learning through games: scored placement test - ranking - final test, cooperative elements: partial solutions form the whole solution, peer-learning, group challenges, brainstorming, problem tasks, multiple choice tests, practice oriented, glossary and lexicon for students (which could improve their basic knowledge quickly and effortlessly).