MLEARN

Training teachers to use mobile (hand held) technologies within mainstream education

Project N. 539357-LLP-1-2013-1-UK-COMENIUS-CMP
Grant Agreement 2013 3306 /001-001

Lifelong Learning Programme

This project has been funded with support from the European Commission.
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Research Report
A training needs analysis to support mobile learning and information and communication technology teacher training in MLEARN partner countries

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Acknowledgements
The authors would like to thank most sincerely the partners and teachers who provided invaluable evidence for this report: Fondazione Mondo Digitale (Italy); Action Synergy S.A. (Greece); Bloemcampschool (The Netherlands); and Hamstead Hall Community Learning Centre (UK - England). Thanks are extended also to The Titan Partnership Ltd. for their continuing support for the research through their management of the project.

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1. EXECUTIVE SUMMARY

Background

- This report has been produced by the Department of Educational Research at Lancaster University for the MLEARN project, to support the development of a training programme for in-service teachers focusing on mobile learning through appropriate pedagogic uses of mobile or handheld technologies. The MLEARN project, a European Union (EU)-funded project, will explore and promote teacher development of mobile learning practices in four member states – The Netherlands, the UK (England), Greece and Italy.

The training needs analysis

- To support this development, a training needs analysis has been conducted and completed by the Department of Educational Research at Lancaster University. For this training needs analysis, two target groups were involved: 1) trainers and partners in each country; and 2) teachers to be involved in the training. Four countries were involved, where there were known to be substantial differences in terms of handheld devices' acceptance within teaching practices, and resources in place to implement mobile learning initiatives and other activities. The survey was devised, using findings from the previous background report (Passey & Zozimo, 2014). Two forms of a questionnaire were produced, one for partners and trainers (see Appendix A) and one for teachers (see Appendix B).
- It should be noted that the number of teachers and trainers involved in this initiative is clearly not representative of the entire population of teachers or trainers in each of the four partner countries. The analysis undertaken provides a way to explore the mobile pedagogical training needs of any cohort, but the outcomes in this report indicate the needs of the particular cohorts involved in this project.

Findings from all teacher respondents

- In total, 27 teachers responded from across the four countries.
- The age range taught was 4-19 years, with most teaching across the 6-14 year age range.
- Subjects taught were wide, but most taught either all subjects or science and technology.
- There were 21 teachers out of the 27 who reported they had learners with special educational needs, 11 out of 27 who reported they had learners with communication needs in their classes, and 22 out of 27 who reported they had classes with special support teachers.
- Prior use of digital technologies for teaching was high, 25 out of 27 reporting this, with main prior digital technologies used for teaching being PCs, laptops, internet, robots, and interactive whiteboards (LIM).
- Handheld devices used previously in teaching were lower, with 9 out of 27 reporting their main prior handheld devices used for teaching being iPads, tablets, PCs and laptops.
- Prior use of digital technologies by learners for learning was quite high, with 20 out of 27 teachers indicating main prior digital technologies used by learners for learning being PCs, laptops, internet, robots, and interactive whiteboards (LIM).
- Prior handheld devices used by learners for learning was lower, with 6 out of 27 reporting main prior handheld devices used by learners for learning being smartphones, iPods, Android devices, iPads, tablets, PCs, and laptops.
- Many teachers know of benefits of using handheld devices for teaching and learning, with 16 out of 27 indicating main benefits concerned with handhelds being more attractive and engaging for learners, and improving the management of courses.
- Fewer teachers know of issues arising when handheld devices are used in teaching and learning, with 11 out of 27 identifying main issues as technological.
- Main forms of support requested from training sessions are technological and content knowledge.
- Main features or benefits requested from the training are enhanced focus gained from mobile learning moments, the provision of constant alertness, and the use of authentic teaching and learning materials.

- Main approaches requested from the training sessions are collaborative, situated and constructivist.
- Existing knowledge of Apps or software are mainly a few or none, with 38 items identified in total.
- Main practices requested from training sessions are capturing and using imagery and video, research, and pupils creating their own notes and books in multimedia formats.
- Main examples of practices requested from training sessions are think forward, snap and show, this is what I've done and how I've done it, and tell me how I could improve this.
- Main formats of training sessions requested are hands-on trials of practice, and demonstrations.

Findings from all partner and trainer respondents

- In total, 4 partners and trainers responded to the survey. Their responses are similar to those from the teachers, but they differ in some important ways, which are indicated here.
- Main prior digital technologies used for teaching were reported to be interactive whiteboards, netbooks, visualizers, PCs, and laptops. So their background in terms of digital technology uses is not likely to be entirely the same as those of the teachers.
- Main prior digital technologies used by learners for learning are PCs, laptops, iPads, and tablets. So their experiences may not be identical in this respect.
- Main forms of support requested from training sessions are issues and challenges, technological and pedagogical knowledge. This difference may need to be discussed if it could affect the focus of the programme.
- Main features or benefits requested from the training are mobility, developing face-to-face social interactions, supporting special educational needs, and language learning support. Again, this difference may need to be discussed if focus is likely to be affected.
- Main approaches requested from the training sessions are collaborative, constructivist, situated, informal and lifelong learning. The latter categories might arise because of this group's wider or longer experience.
- Main practices requested from training sessions are capturing and using imagery and video, creating videos for presentation to wider audiences, pupils recording video clips of lessons for later playback, and pupils creating their own notes and books in multimedia formats. These differences should be considered if focus of the programme is likely to be affected.
- Main examples of practices requested from training sessions are review and reflect, and this is what I've done and how I've done it. The first of these examples is unique to the trainers and partners, and this distinction should be discussed further.

Findings from Italy

- There were 9 participants responding from Italy. Their responses are similar to those from all teachers, but they differ in some important ways, which are indicated here.
- Handheld devices used previously in teaching, reported by 5 out of 9 teachers, is higher than the average, so their experiences may be higher than some other countries in this respect.
- Main issues identified were overall learning issues, and teaching issues. This suggests a more specific focus on these issues could be of value for these teachers.
- Main features or benefits requested from the training were supporting special educational needs, enhanced focus gained from mobile learning moments, the concept of interweaving learning interactions, and language learning support. Again, the differences here suggest a more specific focus on these issues could be of value for these teachers.
- Main practices requested from training sessions were research, pupils creating their own notes and books in multimedia formats, and creating videos for presentation to wider audiences. Again, a more specific focus on these should be considered.
- It should be noted that the teachers involved in this initiative are generally already aware of issues and ways of using digital technologies in teaching and are active in using them within their schools. It is clear from the previous report that this is not a representative population of teachers

from across Italy, and the needs of this cohort, therefore, are not likely to be representative of the wider population.

Findings from Greece

- There were 5 participants from Greece. Their responses are similar to those from all teachers, but they differ in some important ways, which are indicated here.
- The age range taught by these teachers is 6-16 years, with most covering the 13-15 year age range. So more teachers in this group teach older learners than in other countries.
- Main prior digital technologies used for teaching are hardware, projectors, and multimedia. So the teachers' backgrounds with previous technologies are likely to be different from other countries.
- Main prior handheld devices used for teaching are experimental instruments in physics and chemistry. Again, this highlights a difference in technological experience.
- Main prior handheld devices used by learners for learning are experimental instruments, and Android mobile telephones. This highlights a difference in terms of experience of their learners from the picture provided by the wider teacher group.
- Main benefits identified were facilitating the process of learning. This is a different main benefit identified, so the focus of these teachers should perhaps be rather different from those in other countries.
- Knowing of issues arising when handheld devices are used in teaching and learning were highlighted by 1 out of 5 teachers, which is lower than that for other countries.
- Main forms of support requested from training sessions are technological, content and pedagogical knowledge, the learning environment, aspects of communication, issues and challenges. This width suggests that these teachers could benefit from a wider range of support in these respects.
- Main approaches requested from the training sessions are constructivist, situated, collaborative, informal and lifelong learning. The latter approaches suggest the teachers could benefit from a wider range of approaches being considered.
- Main practices requested from training sessions were organising notes and work, research, discussing strengths and weaknesses of work presented and shared by pupils, and creating videos for presentation to wider audiences. This rather different profile suggests that these teachers would benefit from a different balance in terms of practices considered.
- Main formats of training sessions requested were hands-on trials of practice, sessions captured on video, and case study examples. These latter requests suggest a rather different format approach could be of benefit to these teachers.

Findings from the Netherlands

- There were 15 participants from the Netherlands. Their responses are similar to those from all teachers, but they differ in some important ways, which are indicated here.
- Mostly they teach all subjects, mathematics, and languages and literature. This balance is different from the balance across all teachers, and may be supported by a more specific subject focus.
- Main prior digital technologies used for teaching are interactive whiteboards. This suggests a different technological background for these teachers.
- Knowing of benefits of using handheld devices for teaching and learning was stated by 6 out of 15 teachers, which is lower than in other countries. Main benefits identified were adaptability to the learner, and improving the management of courses. These benefits also suggest a difference in terms of possible focus and background.
- Knowing of issues arising when handheld devices are used in teaching and learning was reported by 5 out of 15, which is lower than in other countries. Main issues identified were technological, and student learning issues. This could suggest a different focus would benefit these teachers in this respect.
- Main features or benefits requested from the training were enhanced focus gained from mobile learning moments, broadening assessment tasks, supporting special educational needs, and language learning support. This balance is different from those indicated in other countries, and suggests a different balance could be of value for this group.

- Main practices requested from training sessions were capturing and using imagery and video, presenting to teachers and peers, and pupils creating their own notes and books in multimedia formats. Again, this different balance suggests a shift in the focus that might be adopted for this group of teachers.

Findings from the UK (England)

- There were 2 participants from England. Their responses are similar to those from all teachers, but they differ in some important ways, which are indicated here.
- The findings from this low number of respondents should be viewed with caution; the outcomes might not indicate a full picture of the needs of all teachers involved in this cohort.
- The age range taught is 11-18 years, which is an older age range than that for many teachers in other countries.
- Main prior digital technologies used for teaching are PCs, laptops, netbooks, visualizers, a variety of handheld devices, and iPads and tablets. This suggests that these teachers may have a different technological background from those in other countries.
- Handheld devices used previously in teaching were reported by 2 out of 2 teachers, so the proportion of those with experience in this area is high. Main prior handheld devices used for teaching are interactive games, and a variety of handheld devices including projectors, microphones, iPads and tablets.
- Main prior digital technologies used by learners for learning are PCs, laptops, netbooks and visualizers. This suggests a different background for these learners from those in other countries. Main prior handheld devices used by learners for learning are interactive games, handheld projectors and microphones, iPads and tablets, which again suggests a different technological background for these learners.
- Main benefits identified were adaptability to the learner, attractiveness and engagement, improving the management of courses, and facilitating the process of learning. This width of benefits suggests a wider interest and perhaps comes from wider background experiences with technologies.
- Main issues identified were technological, and teacher learning issues. The latter is different from those in other countries, and suggests a different balance could be of value for these teachers.
- Main forms of support requested from training sessions are pedagogical knowledge, which again is different from those in other countries, and suggests a different balance should be considered.
- Main features or benefits requested from the training were use of authentic teaching and learning materials, the concept of interweaving learning interactions, the benefit of informality, the influence of ownership, how students can choose or make preferences, the broadening of assessment tasks, and language learning support. This width of requests suggests a different balance in this respect could be of value to these teachers.
- Main approaches requested from the training sessions were wide, again suggesting a different balance should be considered.
- Main formats of training sessions requested were for all except presentations. Again, balance of formats should be considered for this group of teachers.

Recommendations for the training programme

- The training needs analysis identifies from all teachers a balance of content and format that could work for this group of teachers.
- However, the background and experience that trainers and partners bring needs to be considered, so that it matches the needs of teachers in the first instance.
- There are variations across country groups that need to be considered seriously in terms of the balance and format of training sessions to support teacher groups at a national level.

2. INTRODUCTION

This report has been produced for the MLEARN project, to support the development of a training programme for in-service teachers, focusing on mobile learning through appropriate pedagogic uses of mobile or handheld technologies. The MLEARN project, a European Union (EU)-funded project, will explore and promote teacher development of mobile learning practices in four member states – the Netherlands, the UK (England), Greece and Italy. The project will consider how teachers can develop and use pedagogies to support activities with learners using handheld or mobile devices in and outside classrooms. The Department of Educational Research at Lancaster University has been commissioned to undertake background and specifically focused research to support the project development.

A previous literature review (Passey & Zozimo, 2014) offered perspective on how relevant teaching practices, methods and pedagogy are used with handheld devices and how these can support or enhance learning. That review was based on evidence gathered from partners and a number of key contacts, from partner country and EU sources, and from a detailed review of a specifically selected number of published papers from 2008 until 2013. It offered background information for the MLEARN project, pointing towards future avenues for training development and research.

Findings from that report were used to develop a training needs analysis, to gather details from partners, trainers and teachers who would be involved in the initial stages of the MLEARN project. This report details the findings of that training needs analysis. It provides findings at a generic level (from all teacher respondents, and from all trainer and partner respondents), as well as at a more specific national level. Points raised by these findings are highlighted and brought together in order to offer recommendations about the structure and content of a training programme that will fit the needs of teachers and trainers, generically and nationally.

It should be noted that the number of teachers and trainers involved in this initiative is clearly not representative of the entire population of teachers or trainers in each of the four partner countries. The analysis undertaken provides a way to explore the mobile pedagogical training needs of any cohort, but the outcomes in this report indicate the needs of the particular cohorts involved in this project.

3. THE TRAINING NEEDS ANALYSIS AND RESULTS FROM ALL PARTICIPANTS

Why is it important to conduct a training needs analysis?
Training needs assessment can be considered an ongoing process, gathering data to determine what training needs exist, so that training programmes can be developed to help an individual, institution, or organisation accomplish its objectives. The importance of training needs assessment and analysis is well established (see, for example, U.S. Office of Personnel Management, n.d.), and it is argued that these should be concerned as much with identifying what is known and are strengths of individuals and organisations, as much as what is not known and can be gained from training interventions. Training needs assessment should be considered in the context in which it is set; the context determines not only a width of what might be considered as fundamental needs, but also the values that are ascribed to these and how they might be used or deployed.

Training needs analysis can serve as a basis for evaluating the effectiveness of a training programme as well as determining the costs and benefits of the same programme. Indeed, a training needs analysis can be important in identifying problems that may not be solved by training itself. If policies, practices and procedures need to be corrected or adjusted, this is clearly potentially a concern for senior management, rather than it being a training concern (Brown, 2002). This aspect may be particularly relevant when considering the outcomes of a needs assessment survey conducted in the four different countries (with their own specific policies, practices and procedures, as indicated in the first MLEARN research report).

Key questions to consider for the design of the training programme are:
1. What are the main objectives of the MLEARN training programme?
2. What do in-service teachers aim to achieve?
3. What will be the learning outcomes?
4. How will they be measured after the training?

Types of needs analysis
A thorough needs analysis examines training needs at three levels:
1. Organisational.
2. Task.
3. Individual.

In terms of the needs analysis for MLEARN, the data gathered and reported here has enabled these three levels to be considered:
1. Taking an overview of the evidence gathered enables the programme design to be considered from an organisational or MLEARN position.
2. Details within the responses offer ideas of the tasks that should be included.
3. Details within country groupings provide ideas about individual preferences and needs.

The training needs analysis selected and used in this context
For this training needs analysis, a survey was chosen as the means to gather data. The advantages of this were that it:
- Used a variety of question formats: open–ended, projective, forced choice, and priority ranking.
- Reached a number of people in a short time.
- Was relatively inexpensive to conduct.
- Gave opportunity for response without fear of embarrassment.
- Yielded data that was easily summarised and reported.

The disadvantages of this were that it:
- Made limited provision for free response.
- Required substantial time for development of an effective survey.

- Might not effectively get at the causes of problems or possible solutions (according to Brown, 2002).

Devising the survey

For this analysis, two target groups were involved: 1) trainers and partners in each country; and 2) teachers to be involved in the training. Four countries were involved, where there were known to be substantial differences in terms of handheld devices' acceptance within teaching practices, and the resources in place to implement mobile learning initiatives and other activities.

The survey was devised, using findings from the background report (Passey & Zozimo, 2014). Two forms of the questionnaire were produced, one for partners and trainers (see Appendix A) and one for teachers (see Appendix B). Two media were offered for these two forms of questionnaire – either accessed in electronic form in Microsoft (MS) Word, or in online form using online questionnaire software called SNAP. All questionnaires were provided in English by the researchers; FMD translated these into Italian for their teachers, and Bloemcampschool translated these into Dutch for their teachers.

To undertake the analysis across a reasonable sample, the number of responses requested was: 2 from each partner or country trainers; and 10 from teachers in each partner country (those that would be involved in the pilot).

Total teacher responses

The total number of responses from teachers in all four countries was 27. The responses by country are shown in Table 3-1.

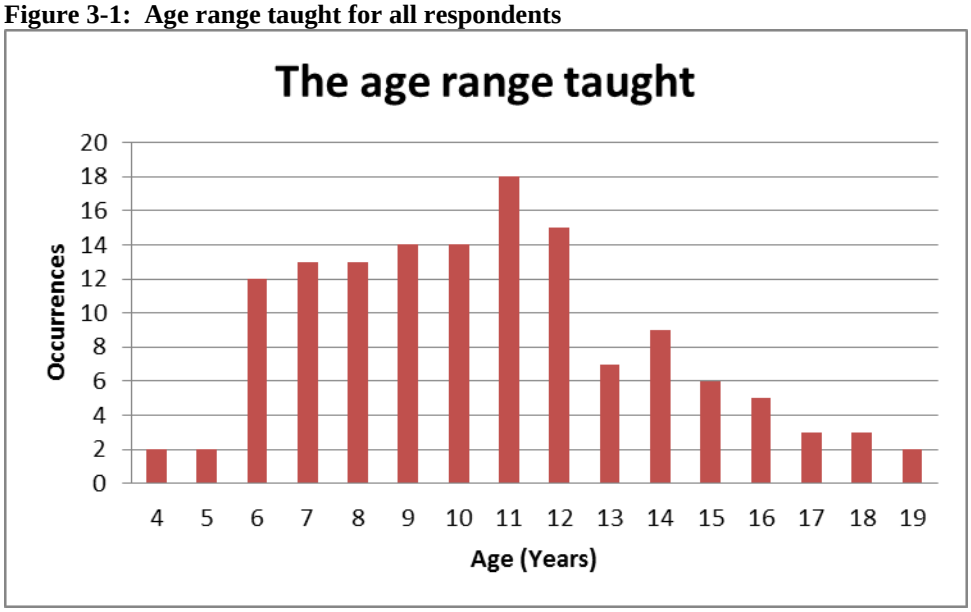
Country	Number of responses
The Netherlands	14
Italy	7
UK (England)	1
Greece	5

Table 3-1: Responses by country

The age range taught

The age range taught spans from 4 to 19 years. The range is detailed in Figure 3-1.

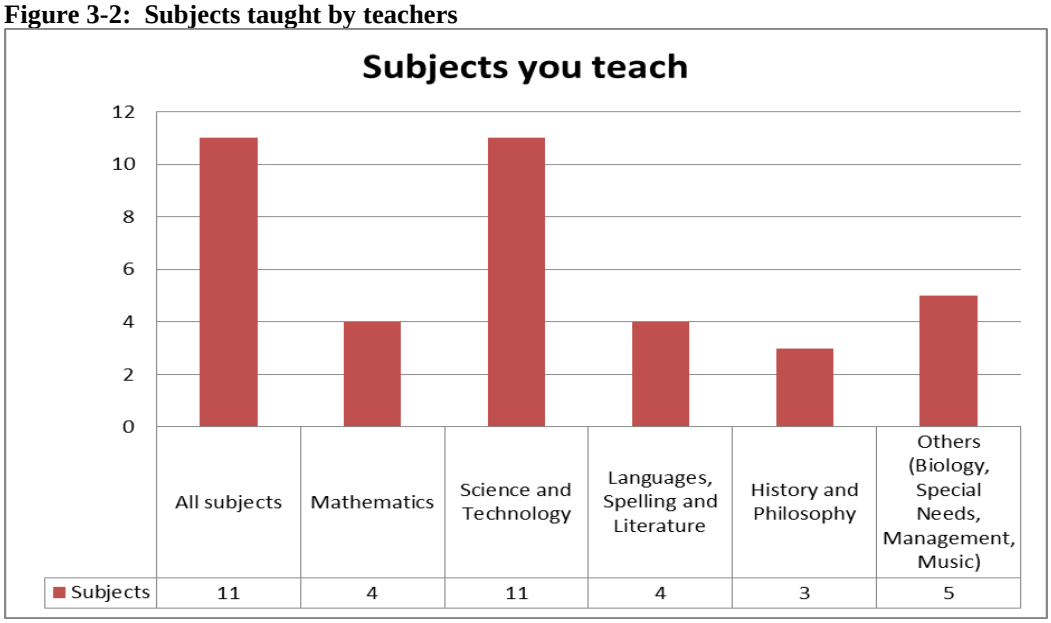
Figure 3-1: Age range taught for all respondents



This figure shows that the majority of teachers teach in the age range from 6 to 14 years.

Subjects taught
Teachers indicated a width of subjects that they teach. The most common subject areas are science and technology. Details are shown in Figure 3-2.

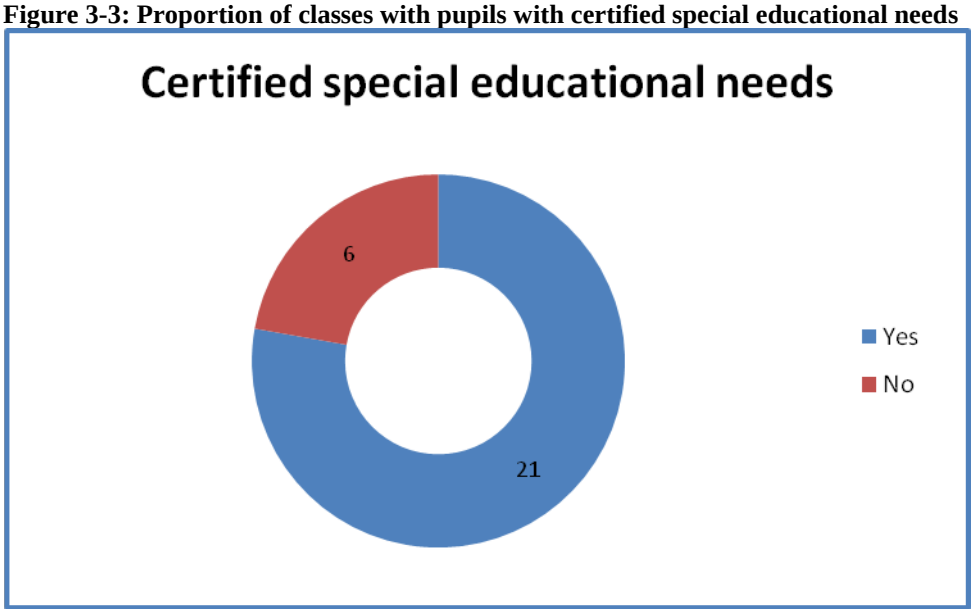
Figure 3-2: Subjects taught by teachers



The majority of the respondents taught either all subjects or science and technology.

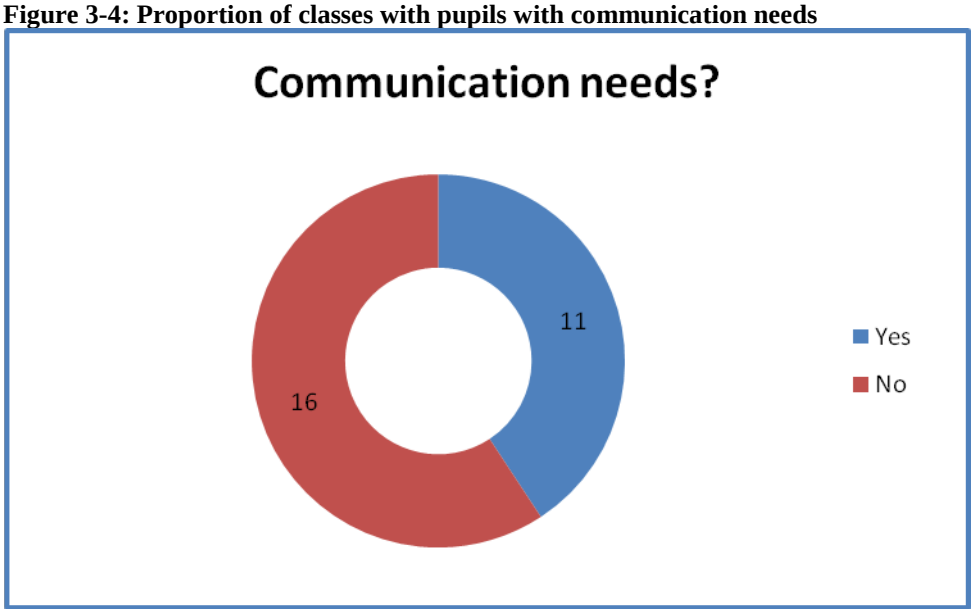
Certified special educational needs
From the 27 teachers, 21 indicated that they have pupils with certified special educational needs in their classes. The proportion is shown in Figure 3-3.

Figure 3-3: Proportion of classes with pupils with certified special educational needs



Communication needs
Fewer teachers indicated that pupils have communication needs. Only 11 indicated that they had pupils with communication needs. The proportion is shown in Figure 3-4.

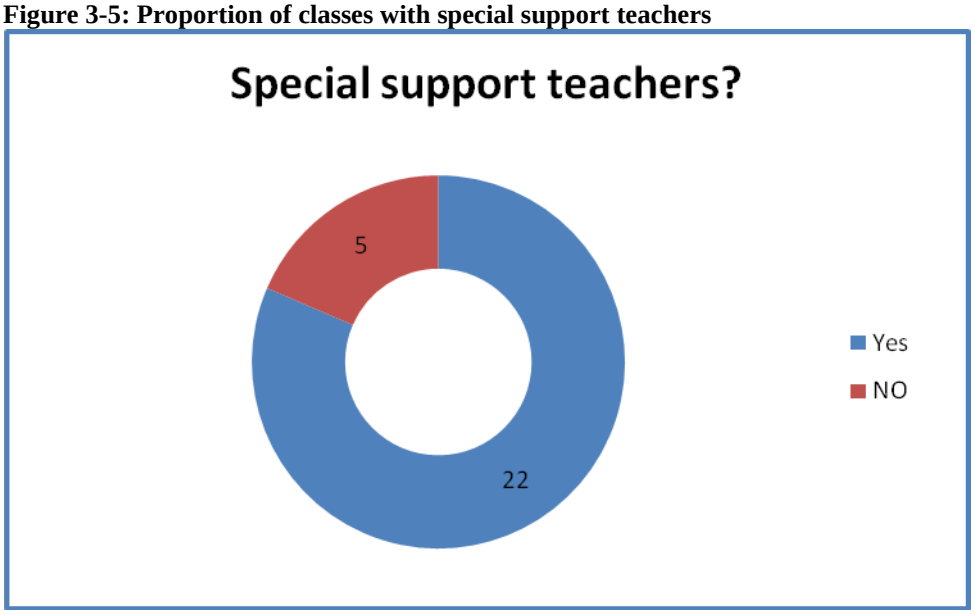
Figure 3-4: Proportion of classes with pupils with communication needs



Classes with special support teachers

However, many teachers indicated that they have special support teachers in their classes. Of the 27, 22 indicated that this was the case. The proportion is shown in Figure 3-5.

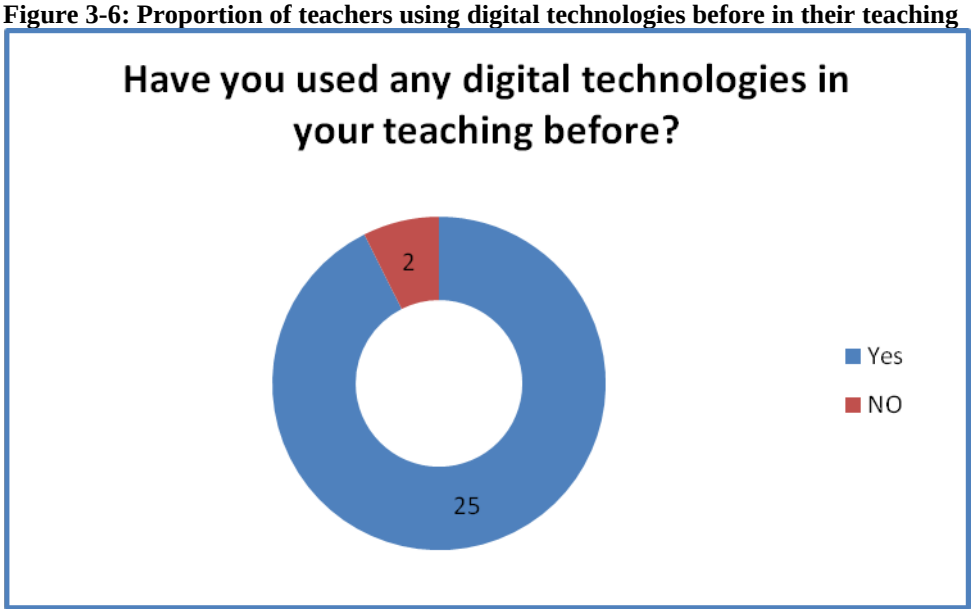
Figure 3-5: Proportion of classes with special support teachers



Prior use of digital technologies in teaching

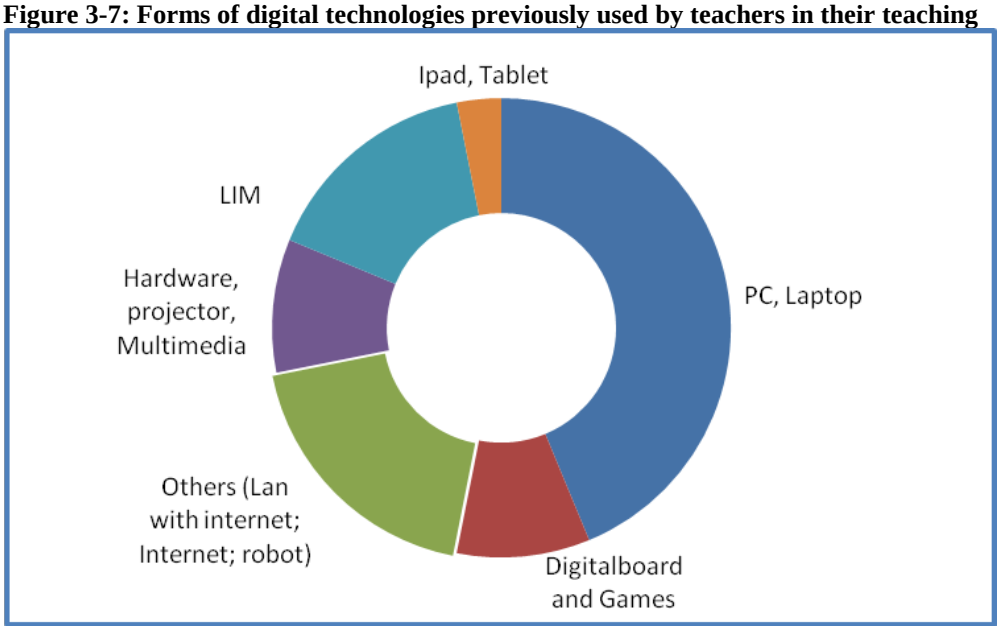
Most teachers indicated that they had used digital technologies before in their teaching (in 25 out of the 27 cases). The proportion is shown in Figure 3-6.

Figure 3-6: Proportion of teachers using digital technologies before in their teaching



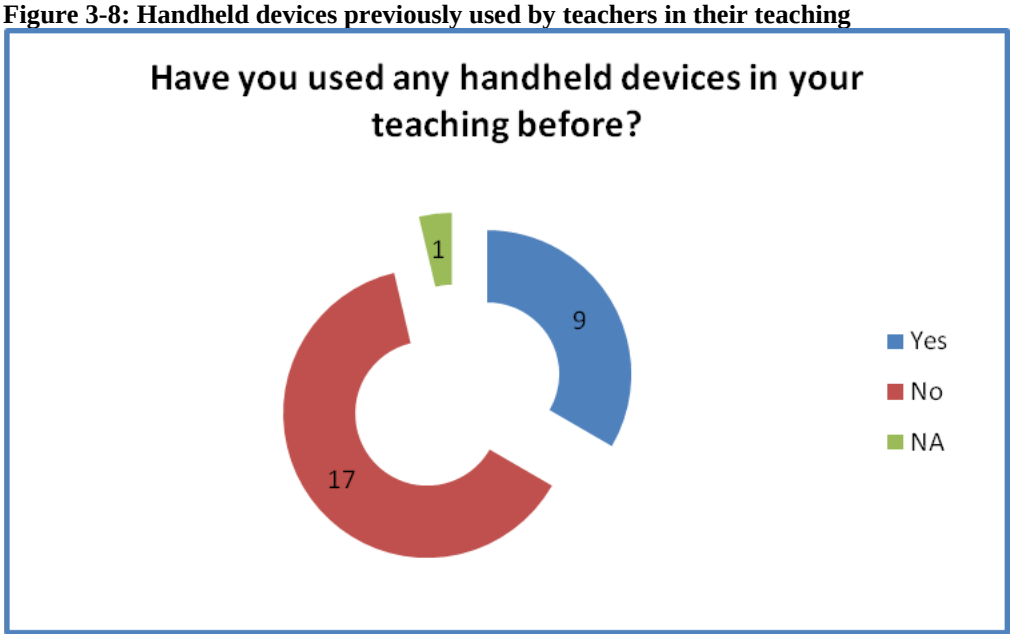
This figure shows that the majority of teachers have previously used digital technologies in their teaching. Most prior use has been with interactive whiteboards, personal computers (PCs) or laptops, LIM, and hardware peripherals such as projectors. Details of responses are shown in Figure 3-7.

Figure 3-7: Forms of digital technologies previously used by teachers in their teaching



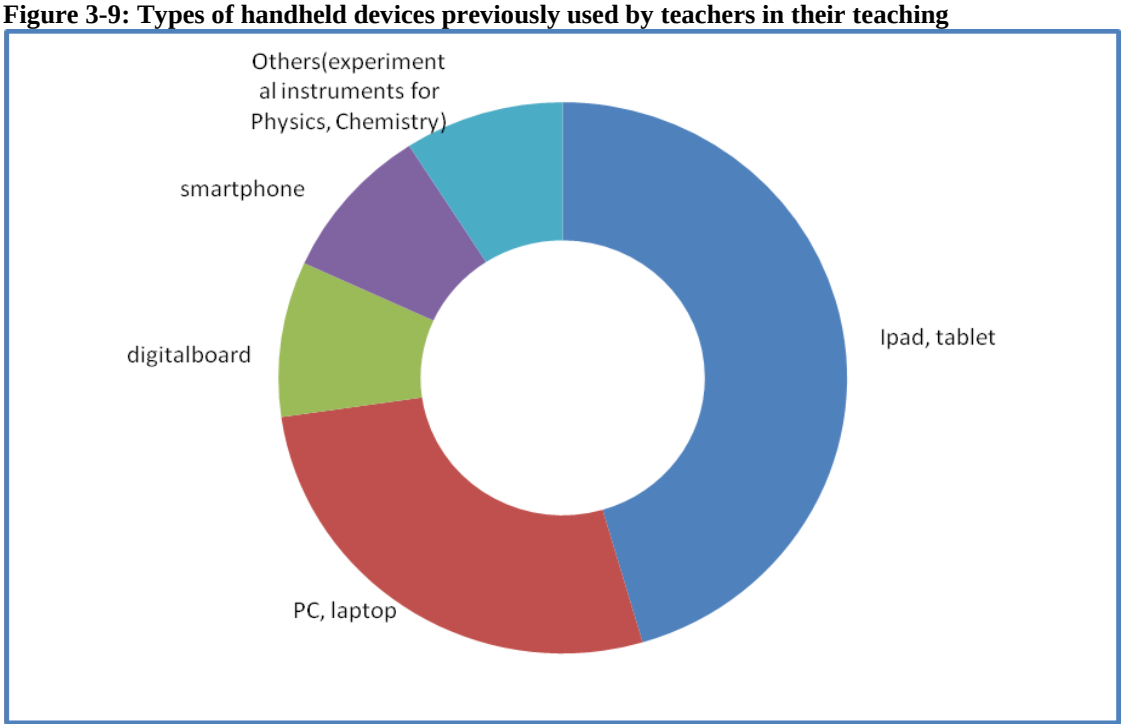
Most teachers indicated that they had not used handheld devices in their teaching previously. Only one third (9 out of 27) indicated that this was the case. The proportion is shown in Figure 3-8.

Figure 3-8: Handheld devices previously used by teachers in their teaching



This figure shows that the majority of teachers have not previously used handheld devices in their teaching. Where handheld devices had been used before, most were iPads, tablets, or PCs and laptops. Figure 3-9 shows the forms of handheld devices used and their proportions.

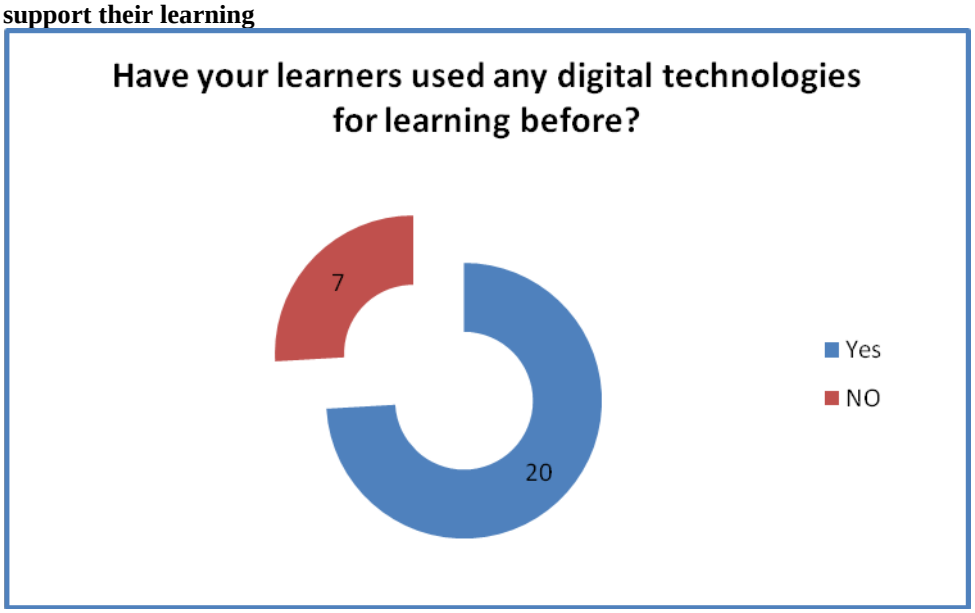
Figure 3-9: Types of handheld devices previously used by teachers in their teaching



Prior use of digital technologies by learners

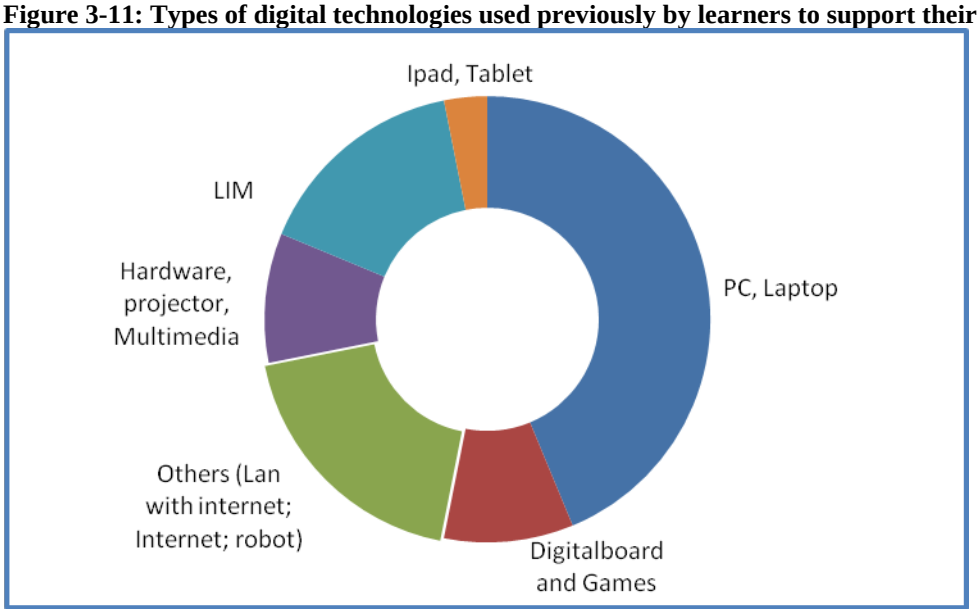
Most teachers indicated that learners had used some forms of digital technologies before to support their learning. Of the 27 teachers, 20 indicated that this was the case. The proportion is shown in Figure 3-10.

Figure 3-10: Proportion of teachers indicating learners have previously used digital technologies to support their learning



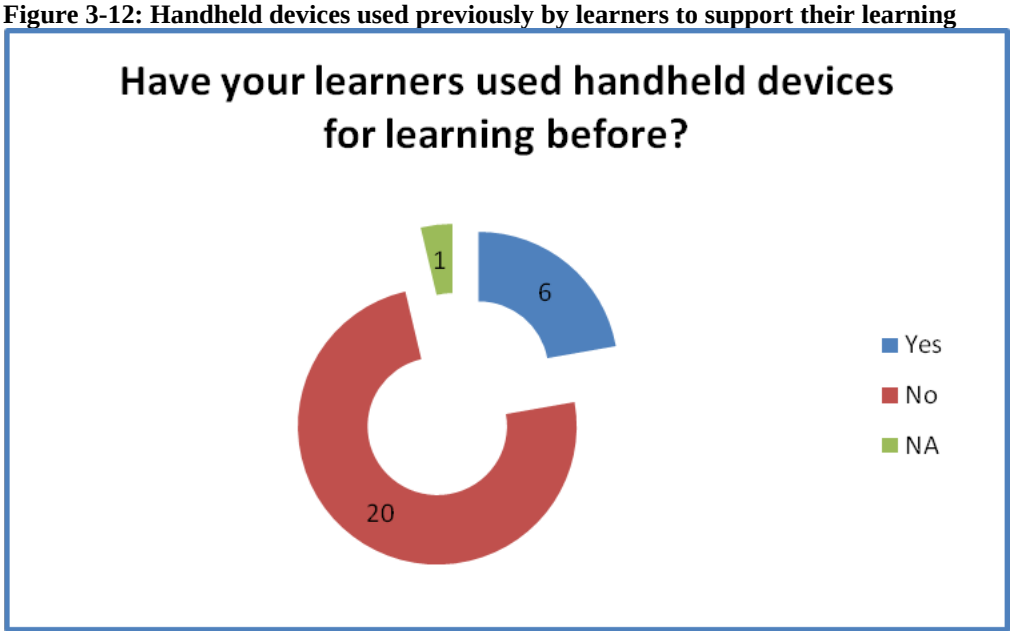
This figure shows that the majority of teachers indicated that their learners have previously used digital technologies for their learning. The most common forms of digital technologies previously used have been PCs, laptops and internet access. The proportions reported are shown in Figure 3-11.

Figure 3-11: Types of digital technologies used previously by learners to support their learning



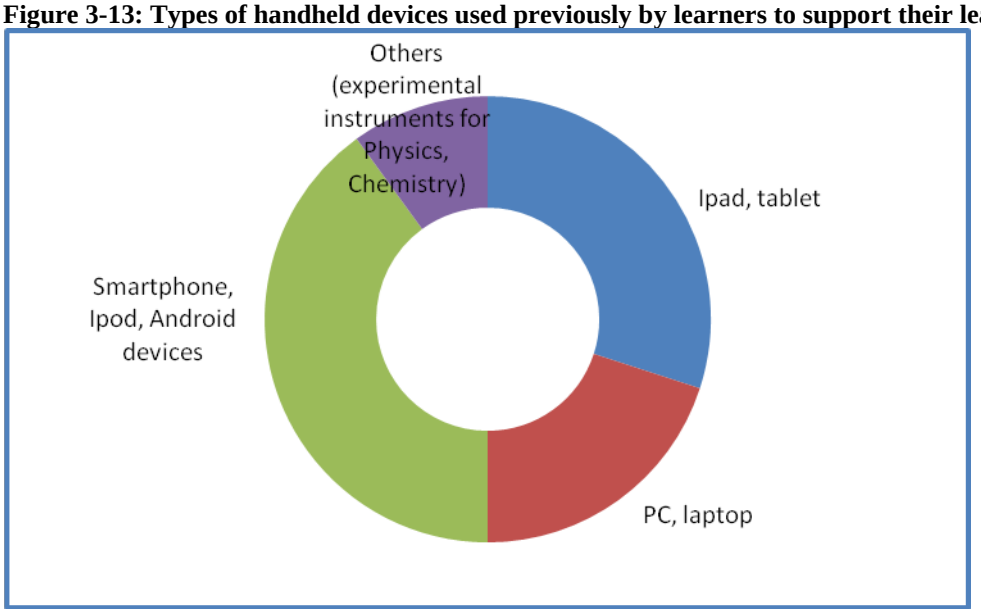
In only 6 cases have learners used handheld devices before for this purpose. The proportion is shown in Figure 3-12.

Figure 3-12: Handheld devices used previously by learners to support their learning



This figure shows that the majority of teachers indicated that their learners have not previously used handheld devices in their learning. Where this has been the case, these have been iPads, tablets and smart telephones. Details of responses are shown in Figure 3-13.

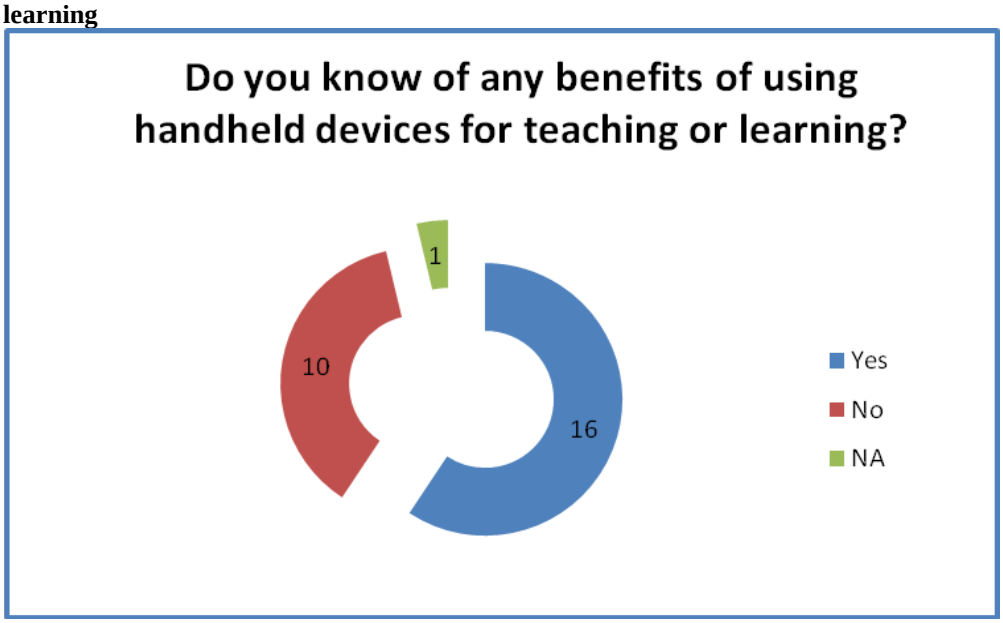
Figure 3-13: Types of handheld devices used previously by learners to support their learning



Benefits and issues when using handheld devices

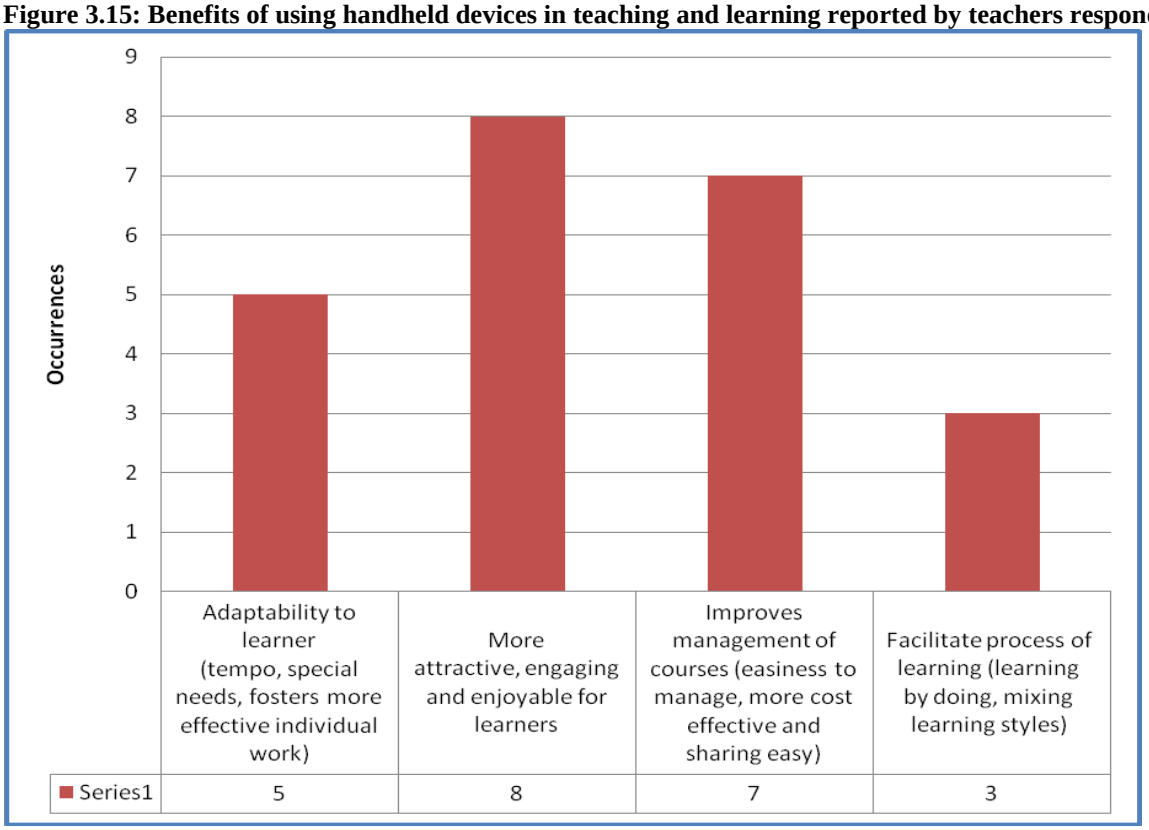
In 16 cases, teachers reported that they already knew of benefits arising from using handheld devices to support learning. The proportion of responses is shown in Figure 3-14.

Figure 3-14: Proportion of teachers knowing of benefits of using handheld devices in teaching and learning



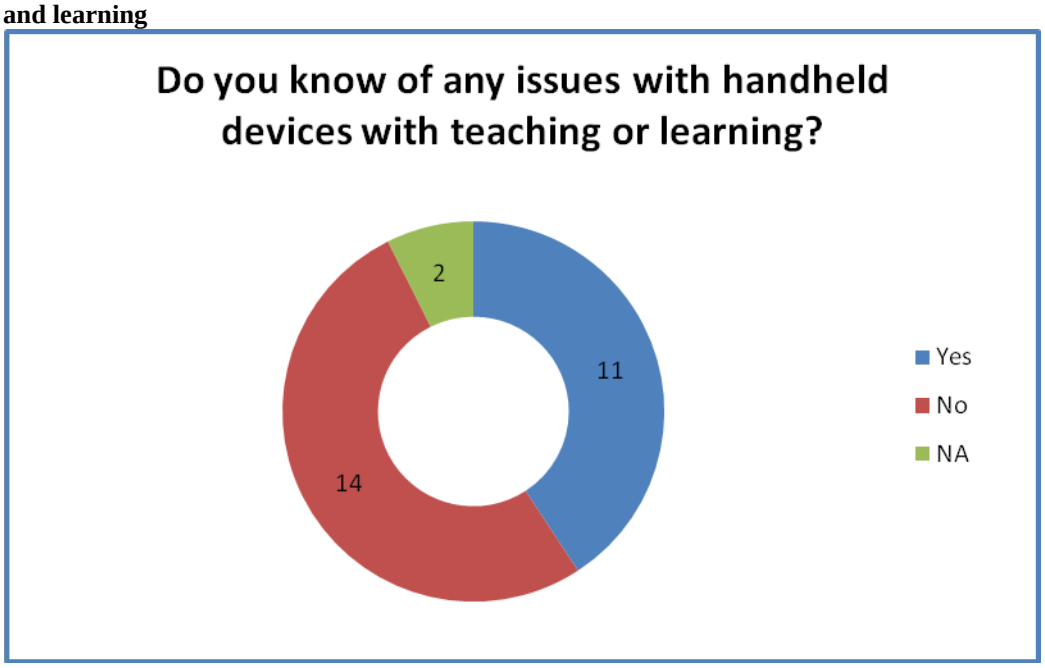
The figure shows that most of the teachers know of benefits of using handheld devices in teaching and learning. Teachers reported four forms of benefits: adaptability to the learner; attractiveness and engagement; improving the management of courses; and facilitating the process of learning. Details of responses are shown in Figure 3-15.

Figure 3.15: Benefits of using handheld devices in teaching and learning reported by teachers responding



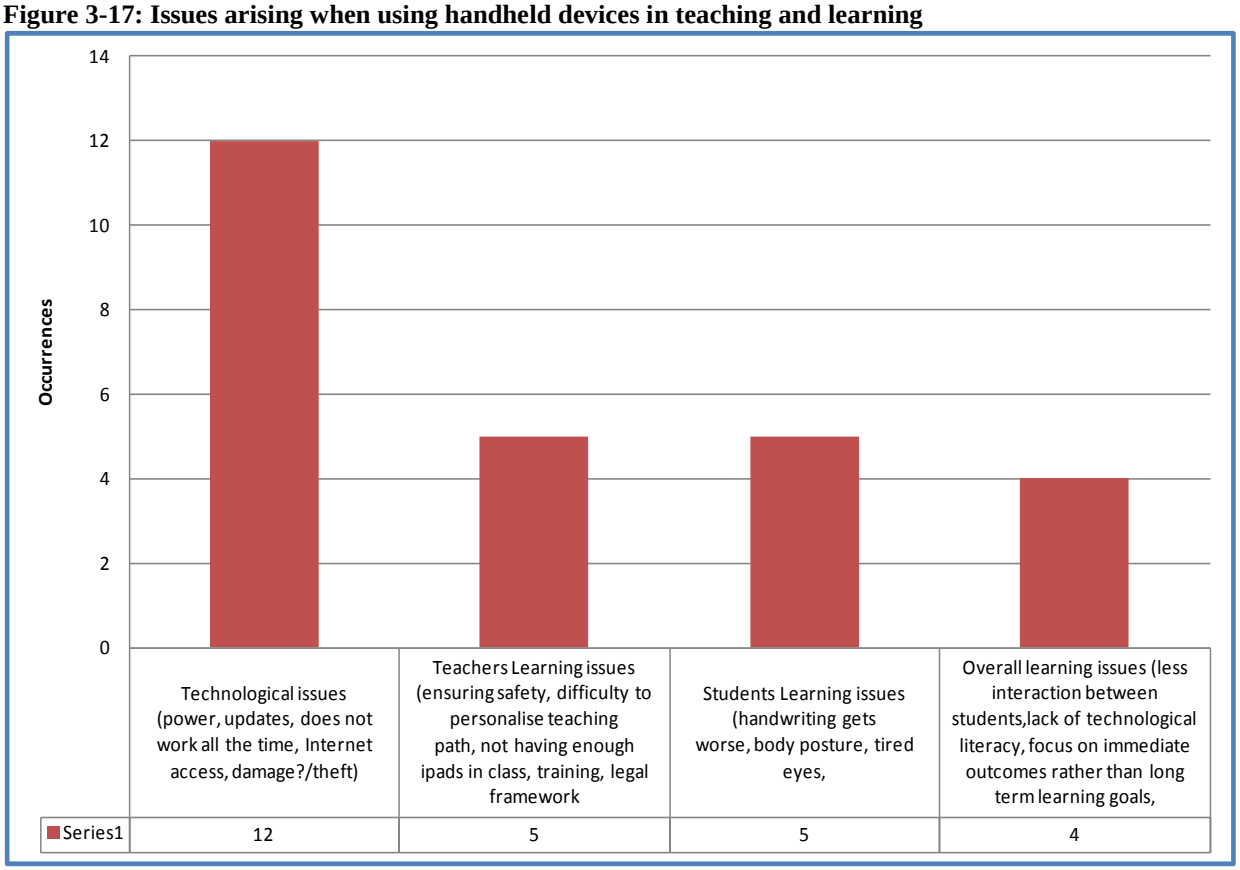
The figure shows that most of the teachers reported benefits of using handheld devices being more attractive, engaging and enjoyable for learners. However, of the 27 teachers, 11 reported knowing of issues arising when handheld devices are used for teaching and learning. The proportion of responses is shown in Figure 3-16.

Figure 3-16: Proportion of responses indicating issues arising when using handheld devices in teaching and learning



This figure shows that the majority of teachers do not know of issues with handheld devices in teaching or learning. Of those reporting issues, teachers reported three forms arising: technological issues; teacher awareness and training issues; and learning issues. Details are shown in Figure 3-17.

Figure 3-17: Issues arising when using handheld devices in teaching and learning



The figure shows that a significant majority of teachers reported technological issues being the ones arising when using handheld devices.

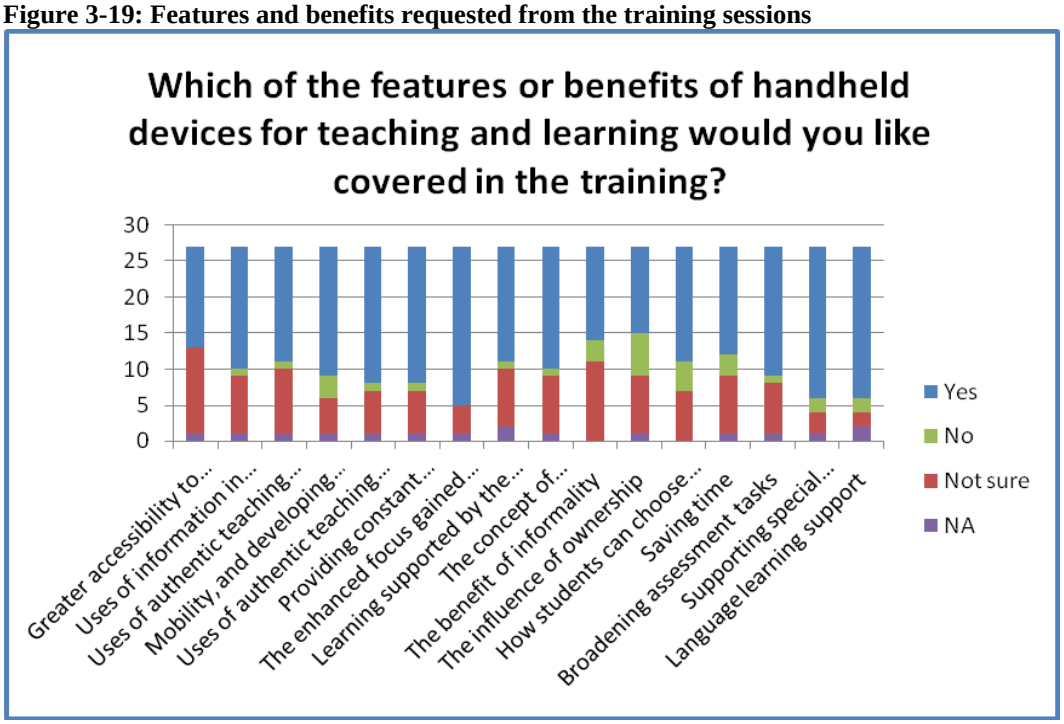
Forms of support from the training course

Teachers indicated that the training course should provide a wide range of different forms of support. These are shown in Figure 3-18.

Figure 3-18: Levels of support requested from the training sessions

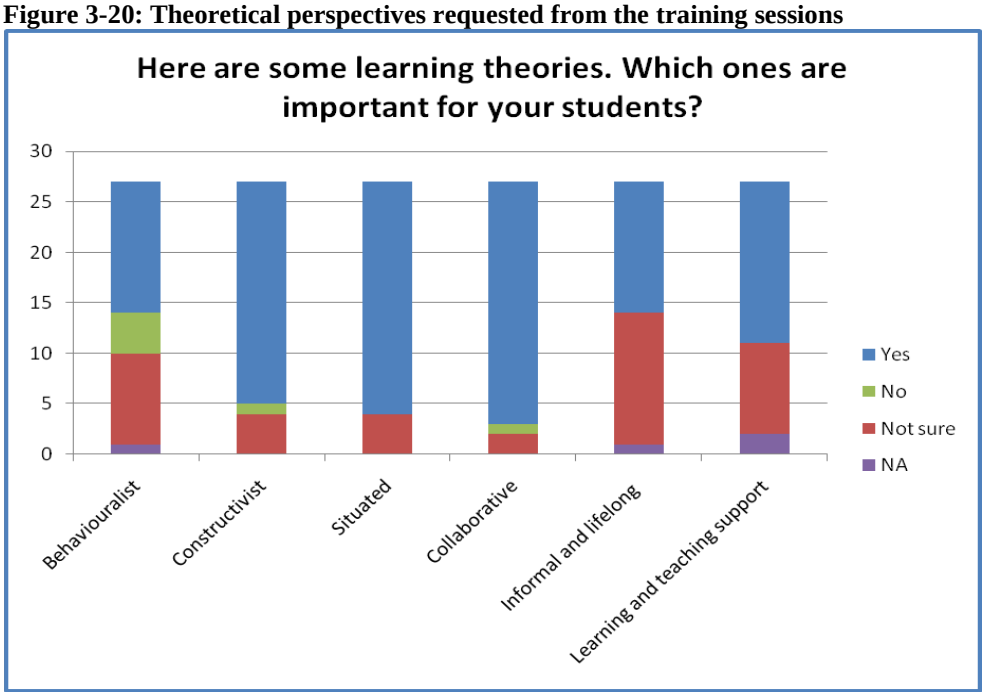
This figure shows that the majority of teachers requested support from the training sessions in terms of technological and content knowledge. Teachers also indicated that a wide range of features and benefits should be covered in the training sessions. Details are shown in Figure 3-19.

Figure 3-19: Features and benefits requested from the training sessions



This figure indicates that the features or benefits of handheld devices most requested to be covered in the training sessions are the enhanced focus gained from mobile learning moments, the provision of constant alertness and the use of authentic teaching and learning materials. In terms of theoretical background, teachers indicated different levels of need in this respect. Details of responses are shown in Figure 3-20.

Figure 3-20: Theoretical perspectives requested from the training sessions

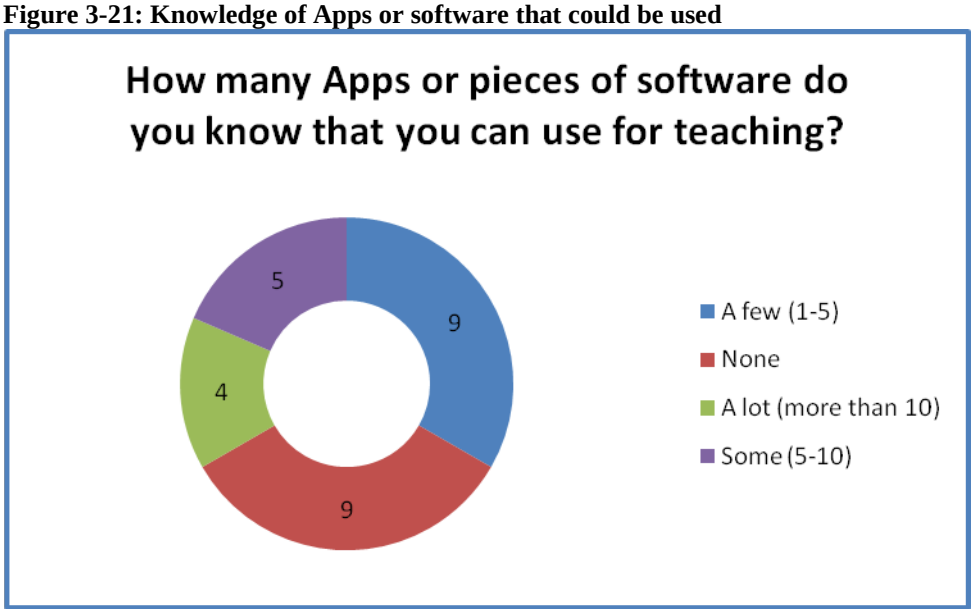


The figure shows a significant proportion of preference for a focus on situated and collaborative learning from the training session.

Software resources and activities

Some teachers indicated that they were aware of some software resources that could be used in teaching and learning, but not in 9 cases. Their responses are shown in Figure 3-21.

Figure 3-21: Knowledge of Apps or software that could be used



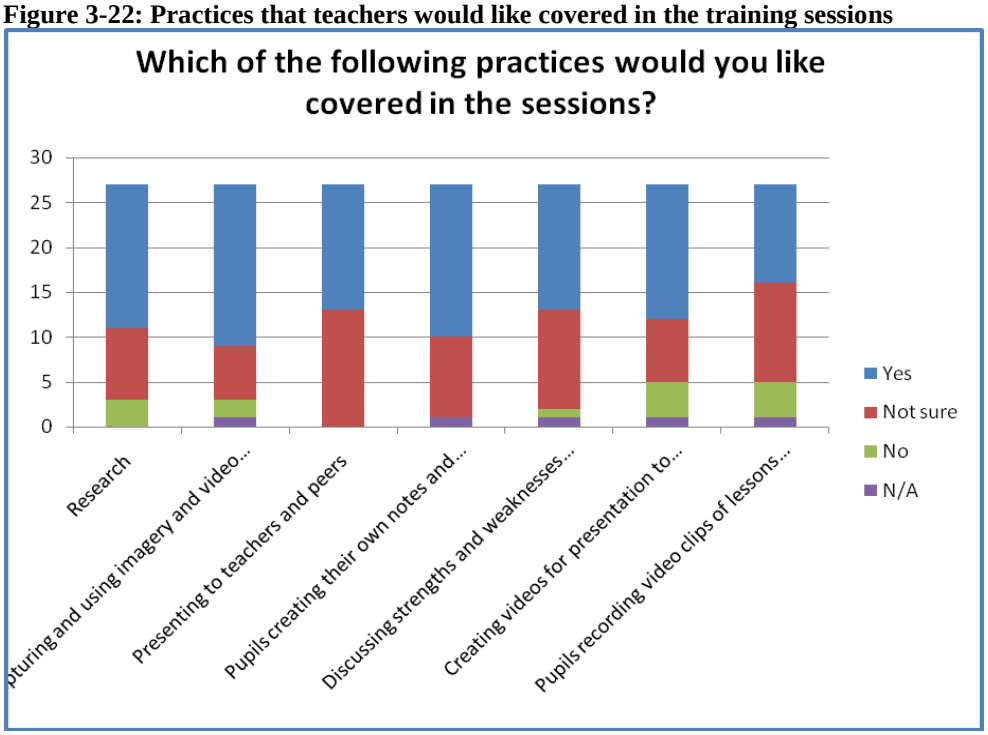
The figure above shows that most teachers have knowledge of a "few" Apps or software that could be used in their teaching. Those teachers who know of Apps or software indicated details of these, and why they use them. These are listed in Table 3-2.

App or piece of software	Why you use it
Audacity	Editing audio
Autocad	To use 3D printer
Beter rekenen	Math
Blendspace	To structure on line contents
Book Creator	Different, interactive approach to summative assessment
C/C++	to program Pic
Chronometers	Measuring time
Clicker	Open software to create personalized didactic units
dees en tees	don't
ePico	Software to read e-books
Erikson maps	Facilitate the links
Famous poetry, Poetry, Puffin Poetry, If Poems, Poetry Station, Verses Poetry	Banks of poetry resources for pupils to access and read from V7=English - KS3, KS4 and KS5 Literacy - KS2
Geogebra	Simplifies the process of learning geometry
Illustrator	to use laser cut
klok coach	extra
Maan roos vis	learning to read
mathboard	don't
Microsoft office	Easy to use and the students know how to use it
Moodle & Joomla	Course administration
Natural Sciences Software	Some experiments are dangerous in the real lab or impossible with the provided infrastructure
Nearpod	Videos and resources - but these are limited and not v useful for my subject at the moment
NXT Programming	to program mindstorm Nxt Robot
Office Suite, Web 2.0 & multimedia software	Official Courses in the curriculum of vocational education
Pcb	to design an electronic board
Pinterest	Lesson ideas
PiXlr	Graphic edition very simple for all
Play history, play geography	Materials easy to use on the LIM
Probes	Measuring
Quipper	Revision questions on various topics - good plenary or revision tool
Socrative	Cross curricular - quick, effective assessment of a topic with instant feedback
softwares for students with hearing difficulties	to support students with hearing difficulties
Spelling	extra
SuperMaps	to create multimedia maps
tafels trainen	extra
Tiptool	don't
Toptool	short games while learning
Tuxpaint	Simple graphic
Youtube	Music

Table 3-2: Apps or software that are used by teachers already

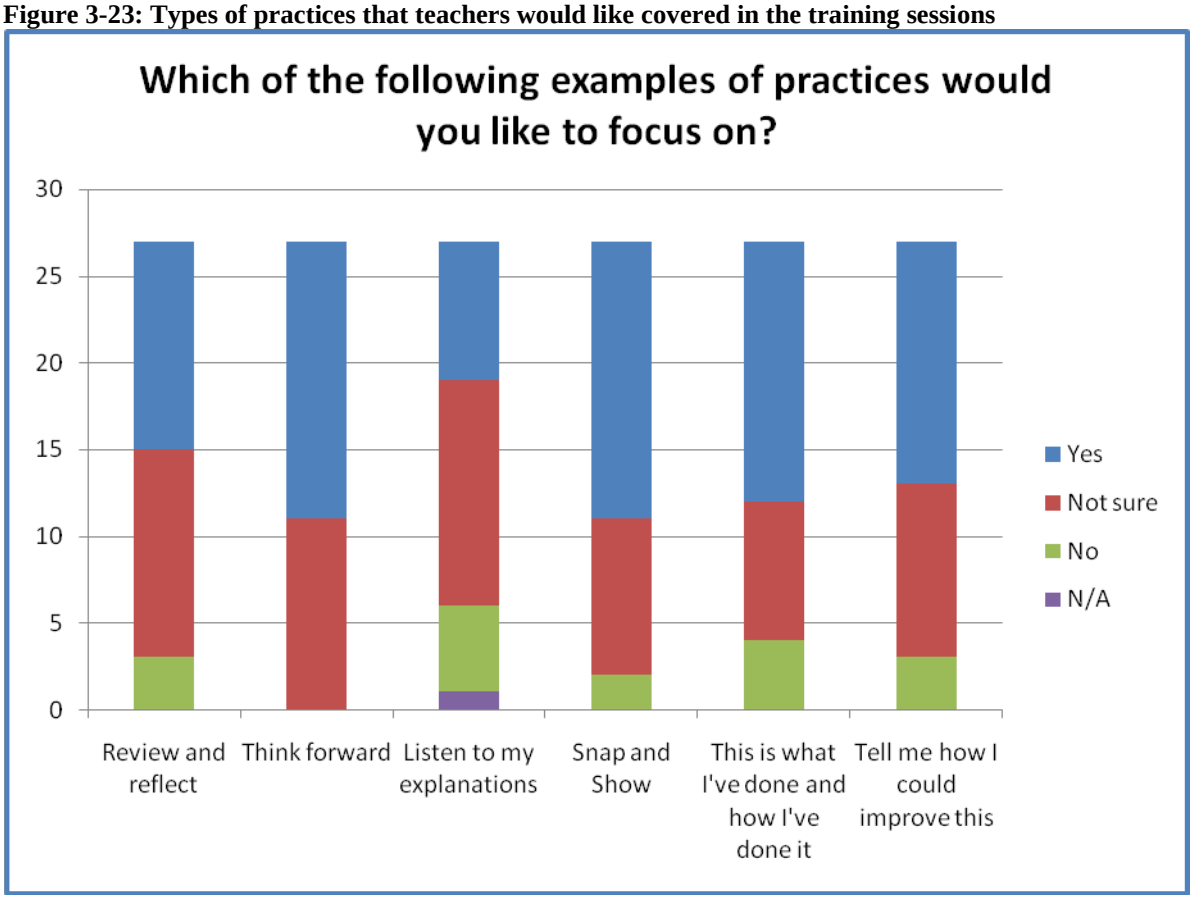
Teachers indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 3-22.

Figure 3-22: Practices that teachers would like covered in the training sessions



The practices that most of the teachers would like covered in the training sessions are research and capturing and using imagery and video. Teachers also indicated examples of practices that they would like covered. Their responses are shown in Figure 3-23.

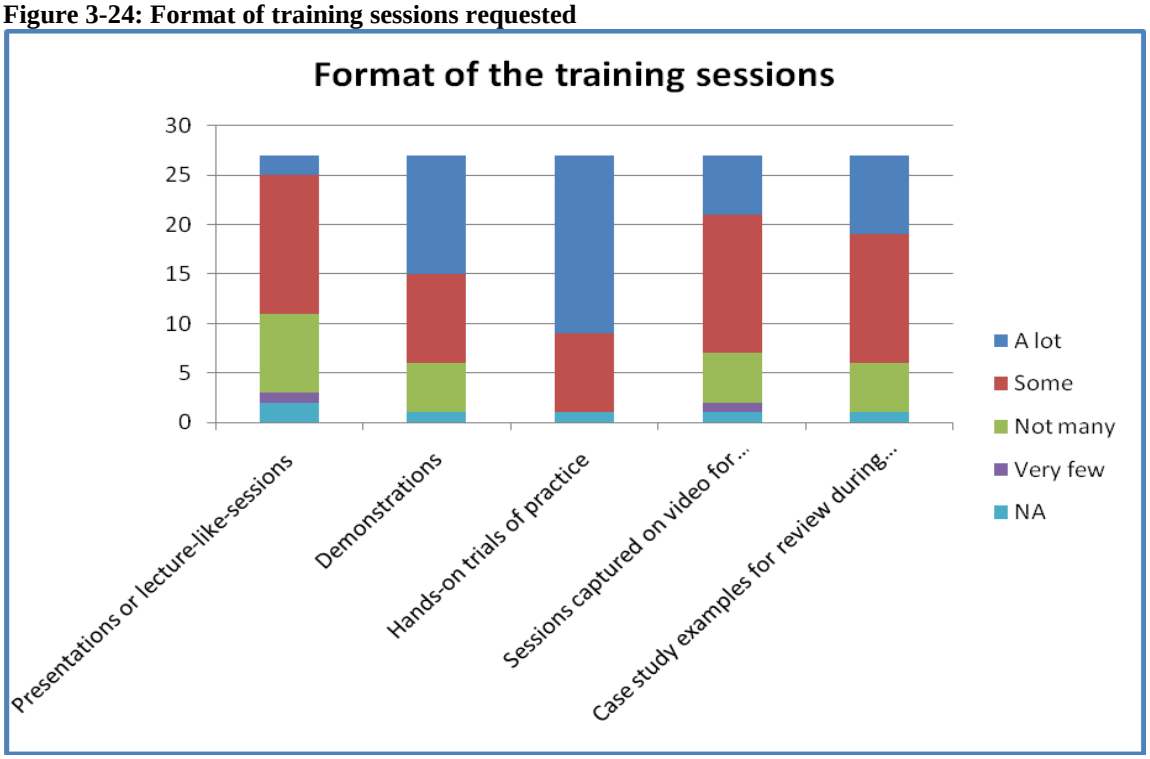
Figure 3-23: Types of practices that teachers would like covered in the training sessions



The types of practices that teachers would like covered in the training sessions the most are "think forward" and "snap and show".

Format of training sessions
Teachers indicated the format of training sessions that they would like. Their responses are shown in Figure 3-24.

Figure 3-24: Format of training sessions requested



The figure shows that most teachers would welcome demonstrations and hands-on trials of practice as their favourite format for training sessions.

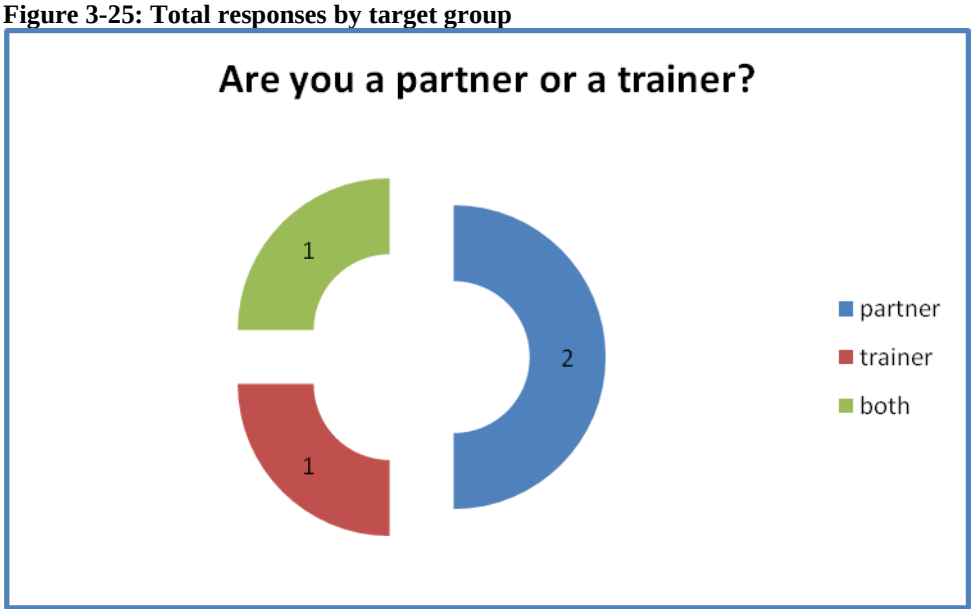
Total trainers/partners responses
The total number of responses from trainers and partners in all four countries was 4. The responses by country are shown in Table 3-3.

Country	Number of responses
The Netherlands	1
Italy	2
UK (England)	1
Greece	0

Table 3-3: Responses by country

Target group responses
The responses by target group are shown in Figure 3-25.

Figure 3-25: Total responses by target group

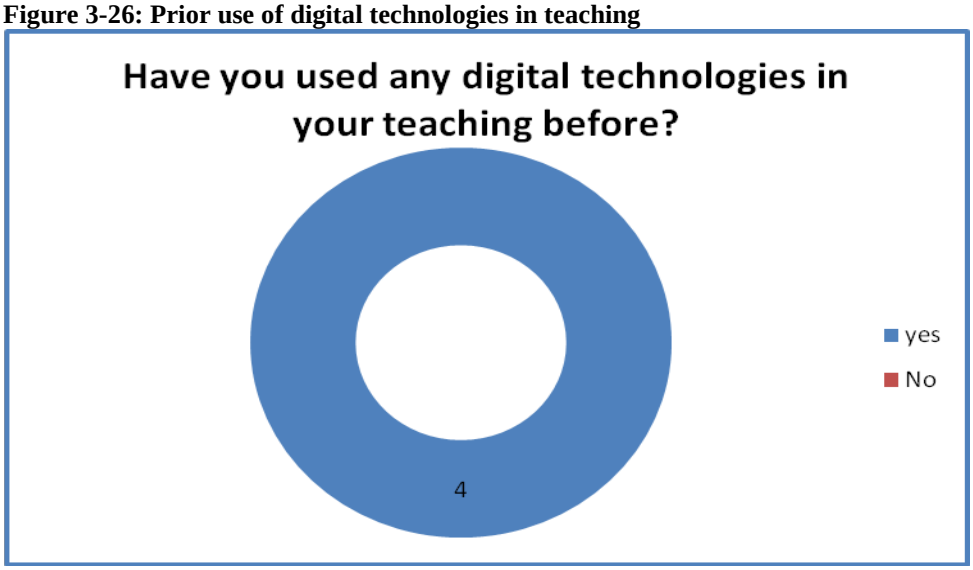


One respondent reported being both a partner and trainer.

Prior use of digital technologies in teaching

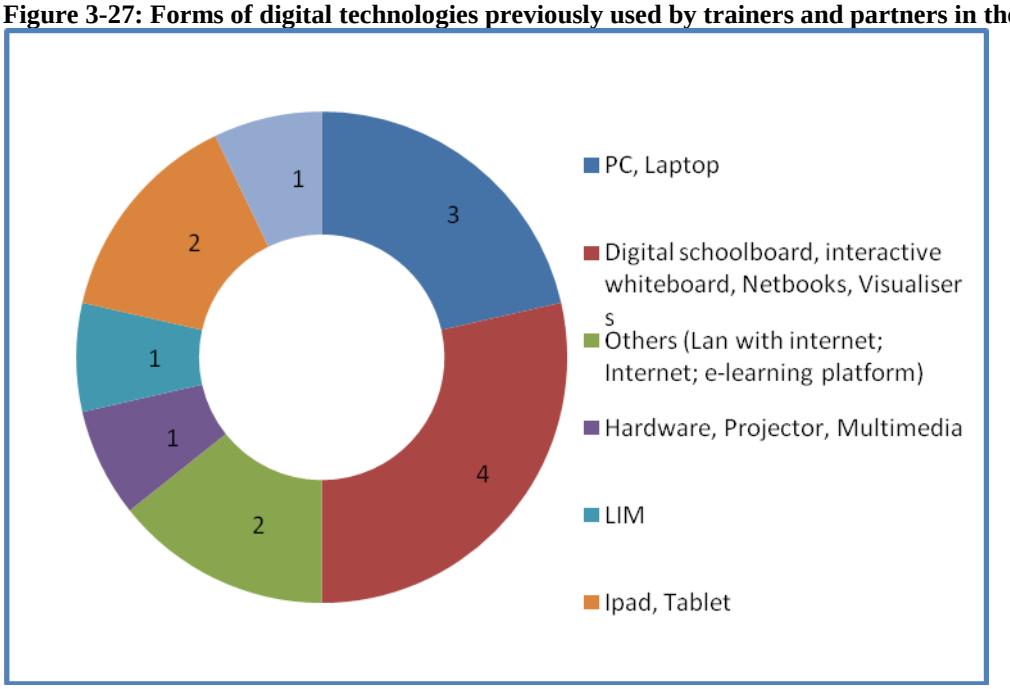
All trainers and partners indicated that they had used digital technologies before in their teaching. The proportion of technologies most used is shown in Figure 3-26.

Figure 3-26: Prior use of digital technologies in teaching



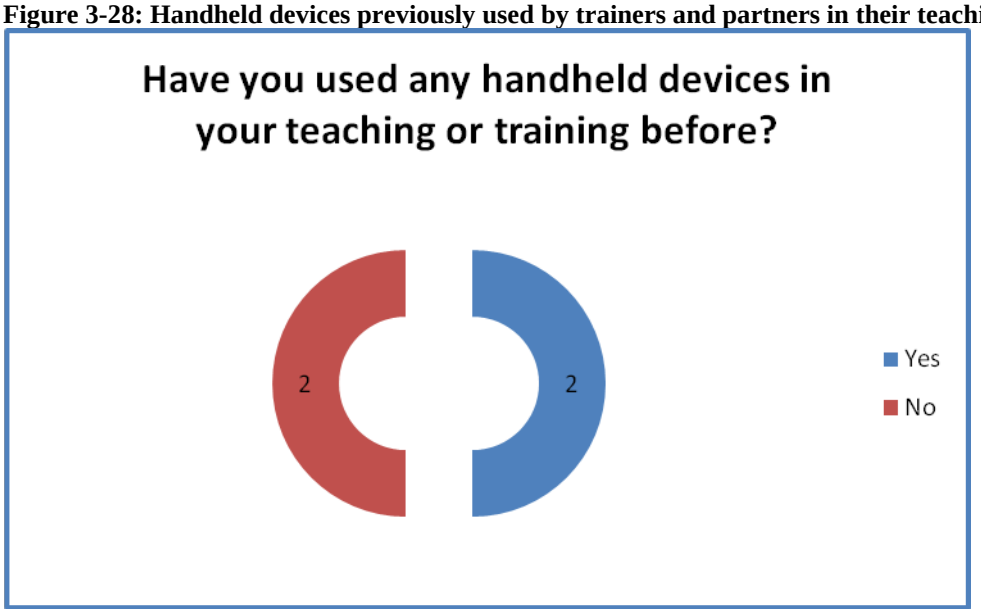
This figure shows that all trainers and partners have previously used digital technologies in their teaching. Most prior use has been with interactive whiteboards, personal computers (PCs) or laptops. Details of responses are shown in Figure 3-27.

Figure 3-27: Forms of digital technologies previously used by trainers and partners in their teaching



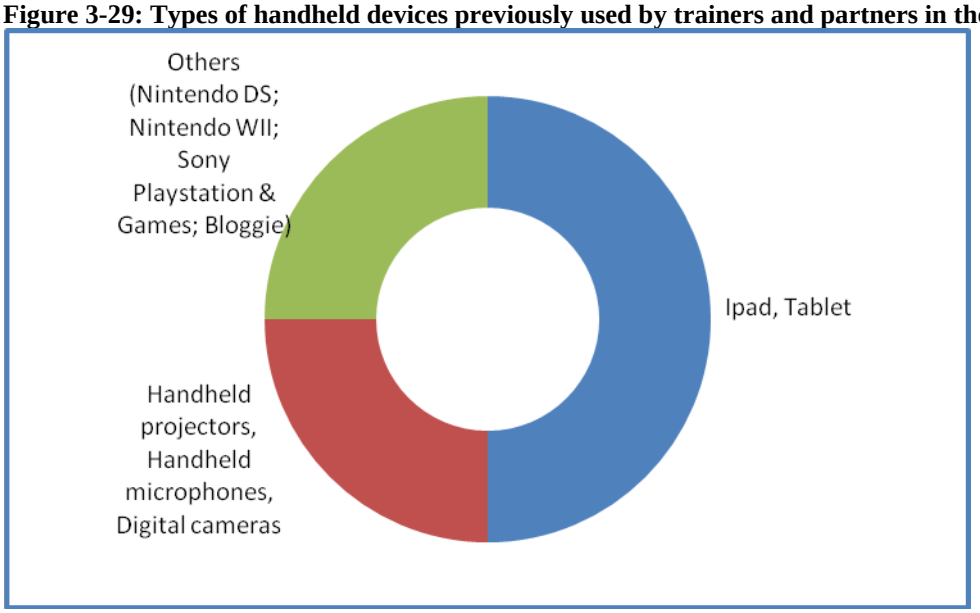
Half of the trainers and partners indicated that they had used handheld devices in their teaching or training previously. The proportion is shown in Figure 3-28.

Figure 3-28: Handheld devices previously used by trainers and partners in their teaching



The figure shows that half of respondents had used handheld devices before in their teaching or training. Where handheld devices had been used before, most were either iPads or tablets. Figure 3-29 shows the forms of handheld devices used and their proportions.

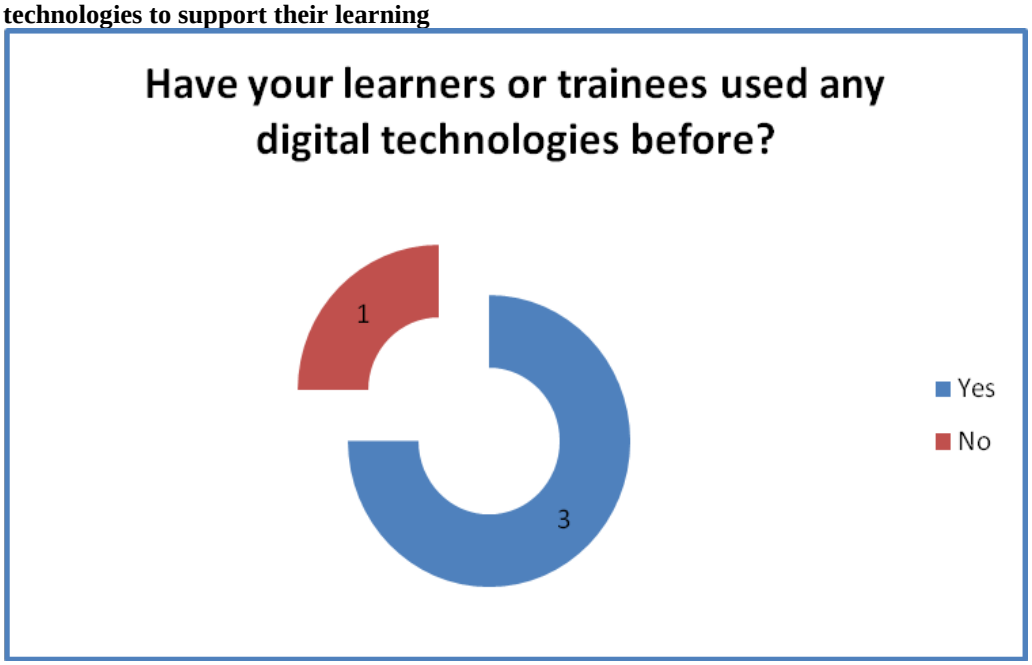
Figure 3-29: Types of handheld devices previously used by trainers and partners in their teaching



Prior use of digital technologies by learners

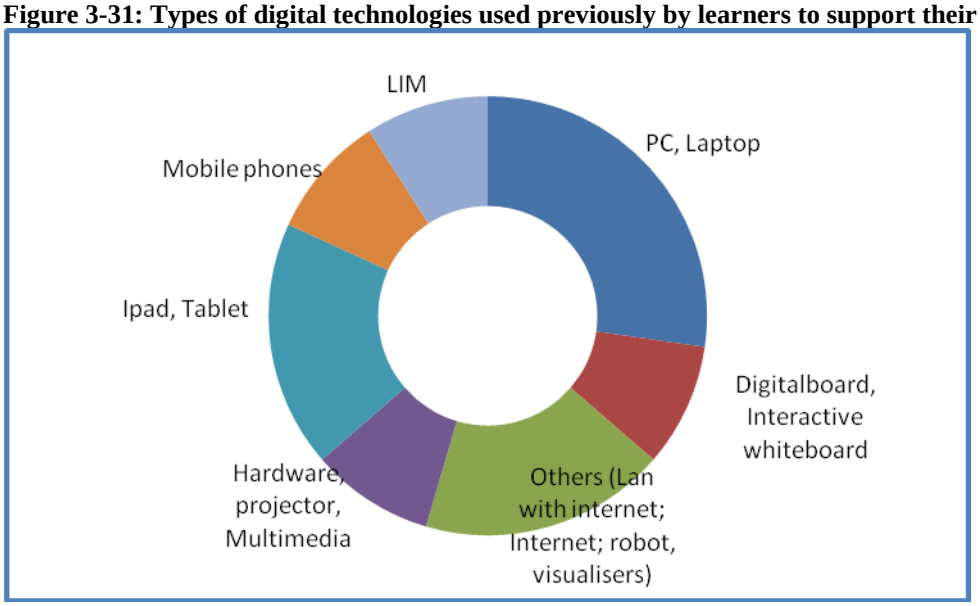
Most trainers and partners indicated that learners had used some forms of digital technologies before to support their learning. The proportion is shown in Figure 3-30.

Figure 3-30: Proportion of trainers and partners indicating learners have previously used digital technologies to support their learning



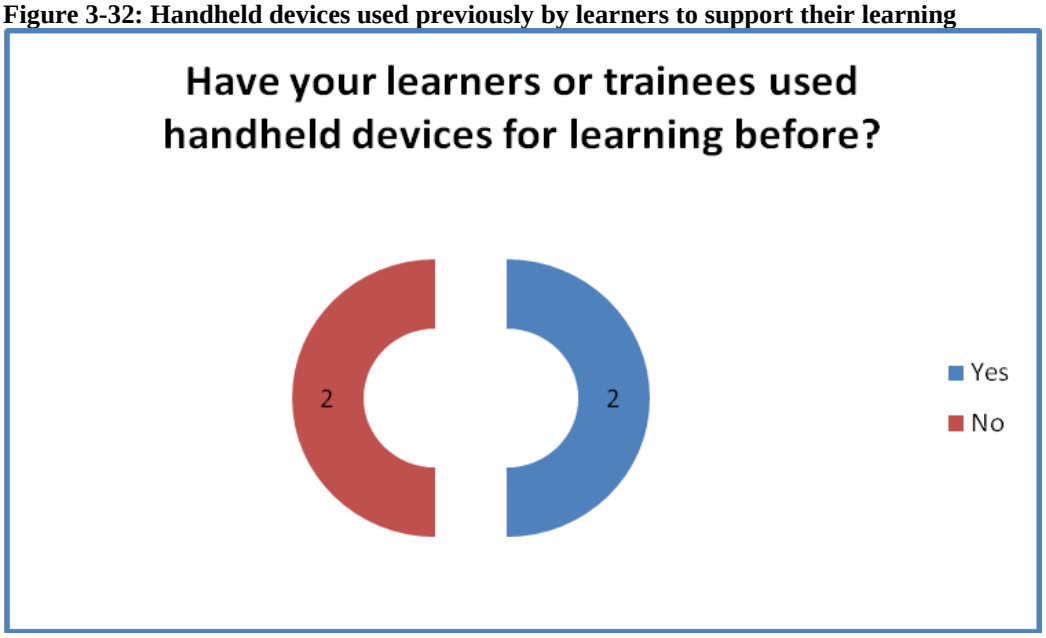
The figure shows that most trainers and partners reported that their learners had previously used digital technologies to support their learning. The most common forms of digital technologies previously used had been PCs, laptops and internet access. The proportions reported are shown in Figure 3-31.

Figure 3-31: Types of digital technologies used previously by learners to support their learning



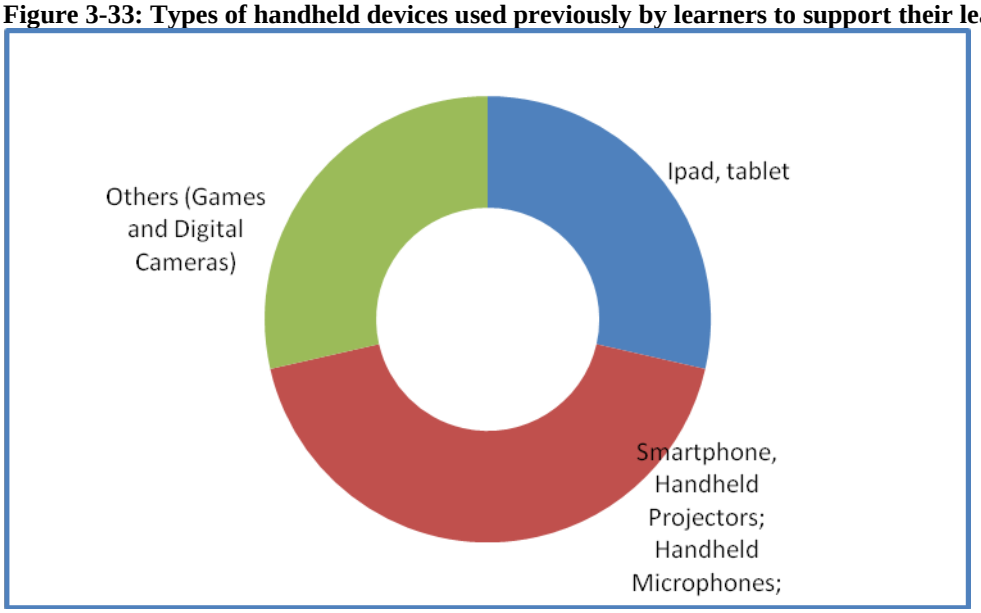
In 2 cases learners had used handheld devices before for this purpose. The proportions are shown in Figure 3-32.

Figure 3-32: Handheld devices used previously by learners to support their learning



This figure shows that half of the trainers and partners indicated that their learners had not previously used handheld devices in their learning. In most cases, these had been smart telephones, handheld projectors, microphones, iPads and tablets. Details of responses are shown in Figure 3-33.

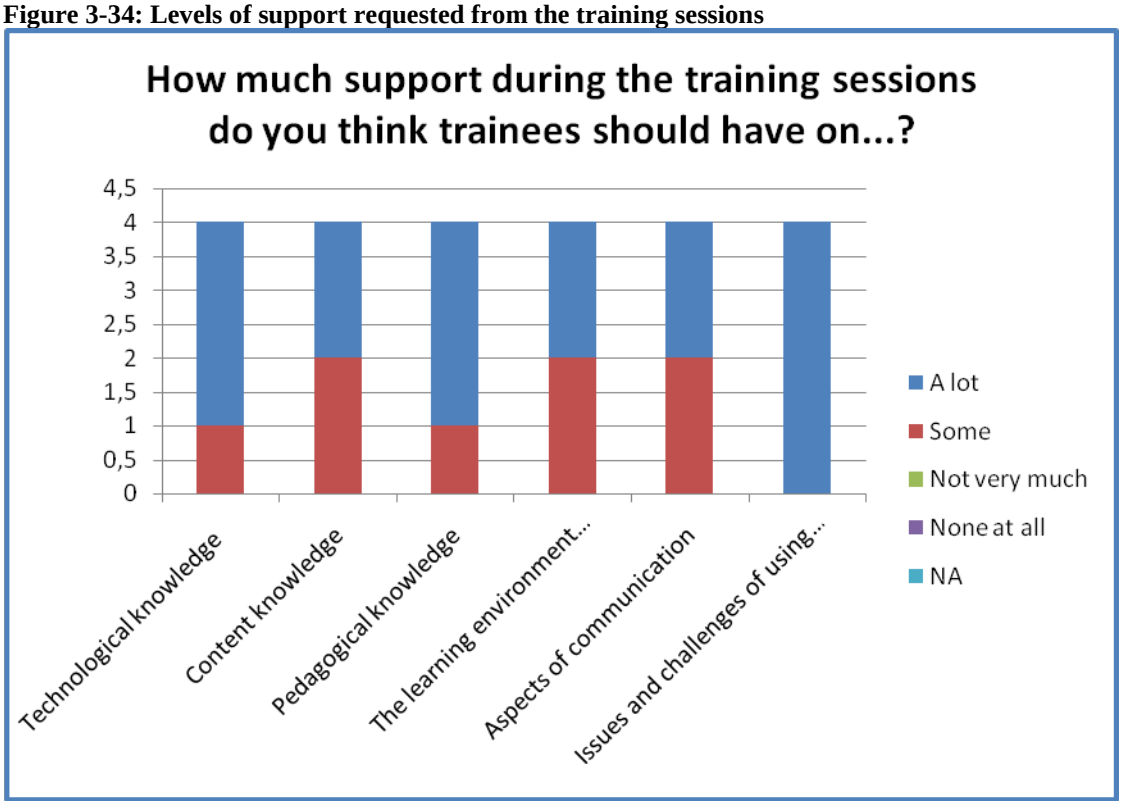
Figure 3-33: Types of handheld devices used previously by learners to support their learning



Pedagogies using digital technologies

Trainers and partners reported about the five levels of support that might be required during the training sessions: technological knowledge (what the device can do and how to use it); content knowledge (what subjects and topics can be addressed using the devices and their applications); pedagogical knowledge (how this is done through the development and deployment of appropriate teaching and learning activities); the learning environment beyond the classroom; aspects of communication; and linking to teaching and learning issues. Details of responses are shown in Figure 3-34.

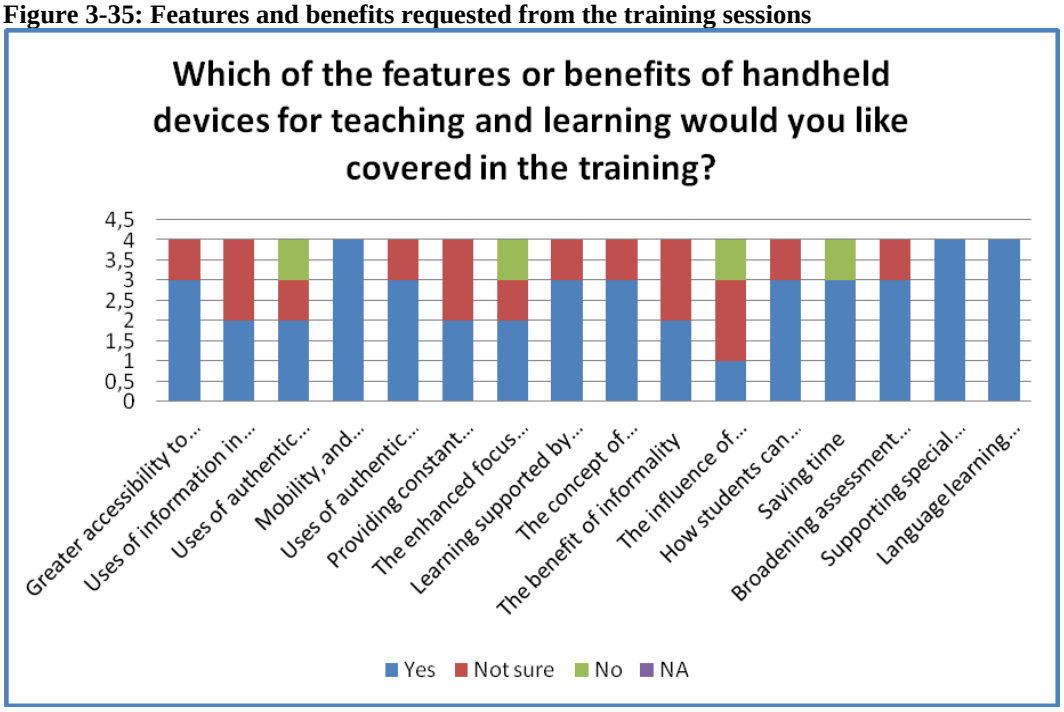
Figure 3-34: Levels of support requested from the training sessions



This figure shows that the majority of trainers and partners request support from the training sessions on issues and challenges of using handheld devices. Trainers and partners also indicated that a wide

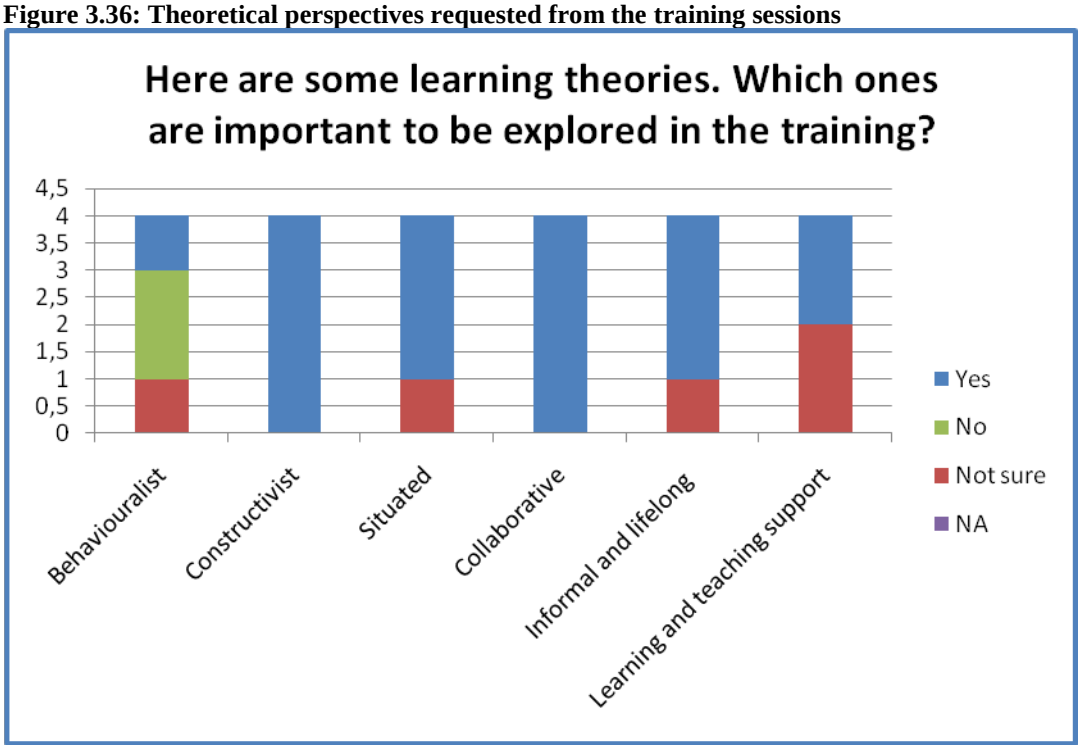
range of features and benefits should be covered in the training sessions. Details are shown in Figure 3-35.

Figure 3-35: Features and benefits requested from the training sessions



This figure indicates that the features or benefits of handheld devices requested the most are aspects of mobility, developing face-to-face social interactions, supporting special educational needs, and language learning support. In terms of theoretical backgrounds, trainers and partners indicated different levels of need in this respect. Details of responses are shown in Figure 3-36.

Figure 3.36: Theoretical perspectives requested from the training sessions

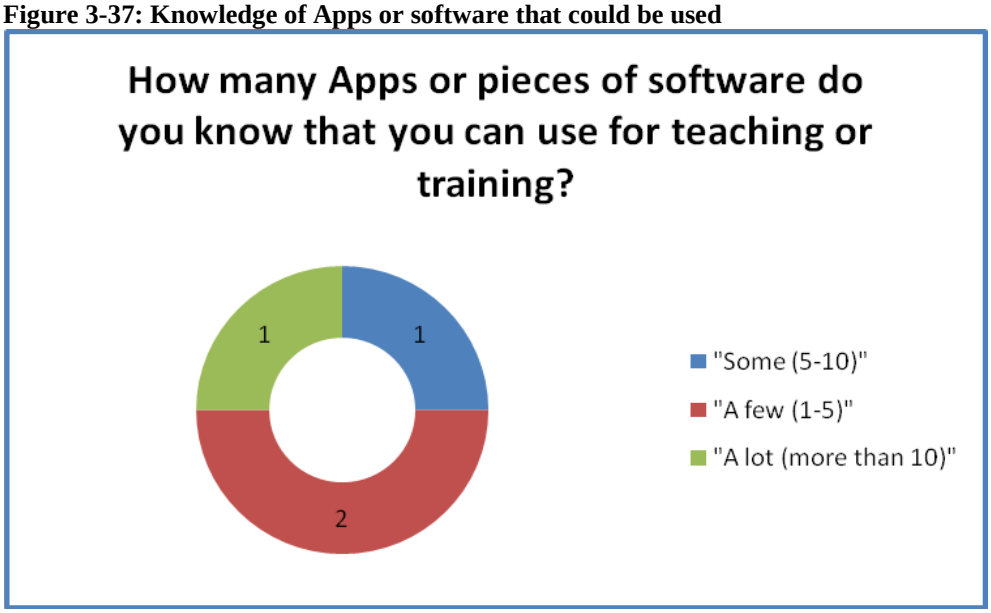


The figure shows a significant proportion of preference for considering constructivist and collaborative learning approaches as theoretical perspectives within the training session.

Software resources and activities

Some trainers and partners indicated that they were aware of some software resources that could be used in teaching and learning. Their responses are shown in Figure 3-37.

Figure 3-37: Knowledge of Apps or software that could be used



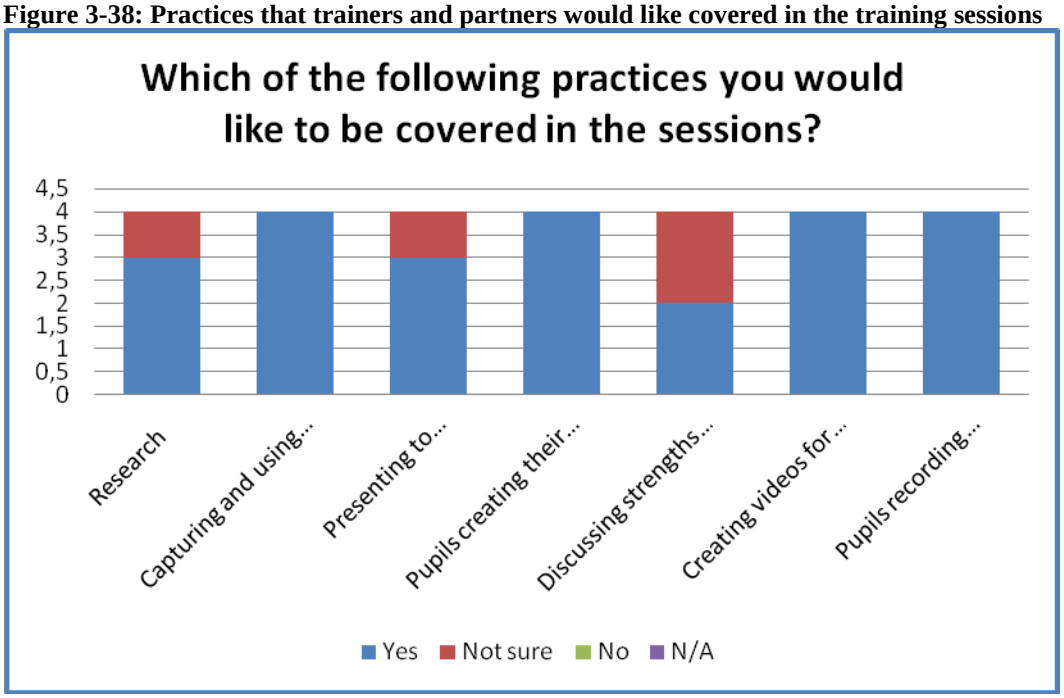
The figure above shows that most trainers and partners have knowledge of a "a few" Apps or software that could be used in teaching. Those trainers and partners who know of Apps or software indicated details of these, and why they use them. These are listed in Table 3-4.

App or piece of software	Why you use it
Book Creator	Create Digital Content; Make Books; Revision Guides
Duolingo	to learn a language
dropbox	To share files and have remote access
Explain everything	For Assessment for Learning; Recording & Sharing Lessons and Pupil Feedback Tool
iThoughts	Create powerful mind maps for brainstorming concepts; Also export to PowerPoint/Keynote to deepen learning and create presentations.
Pixntell	Students can use their own photos or those from the web along with their recorded voice to create a personalized video that's ready to share
ProConnect	To get direct feedback out of the classroom
ShowMe	To write, record and develop a discussion or a lesson which can be played back
Sticky notes	To organise information, remind questions or issues on a subject
Stick Pick	Using Blooms Taxonomy to target pupils with specific questions related to their ability levels.
Videoscribe	Create Starters, Plenaries and ask pupils to review key topics/concepts through creating a video and share with peers. Concept/outcome in the genre of Ken Robinson.
Zet de klok	to learn to tell time

Table 3-4: Apps or software that are used by trainers and partners already

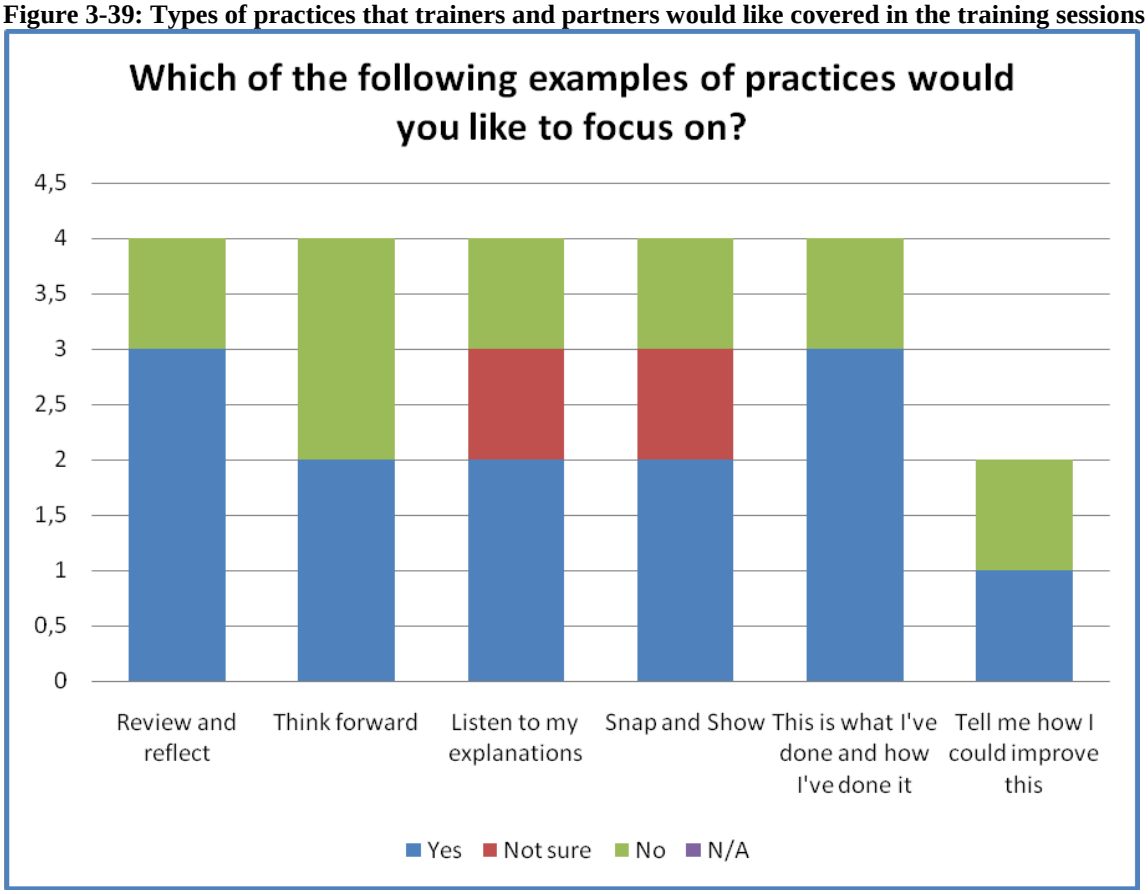
Trainers and partners indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 3-38.

Figure 3-38: Practices that trainers and partners would like covered in the training sessions



The figure shows that the practices that most trainers and partners would like covered in the training sessions are capturing and using imagery and video, creating videos for presentation to wider audiences, and pupils recording video clips of lessons for later playback. Trainers and partners also indicated examples of practices that they would like covered. Their responses are shown in Figure 3-39.

Figure 3-39: Types of practices that trainers and partners would like covered in the training sessions

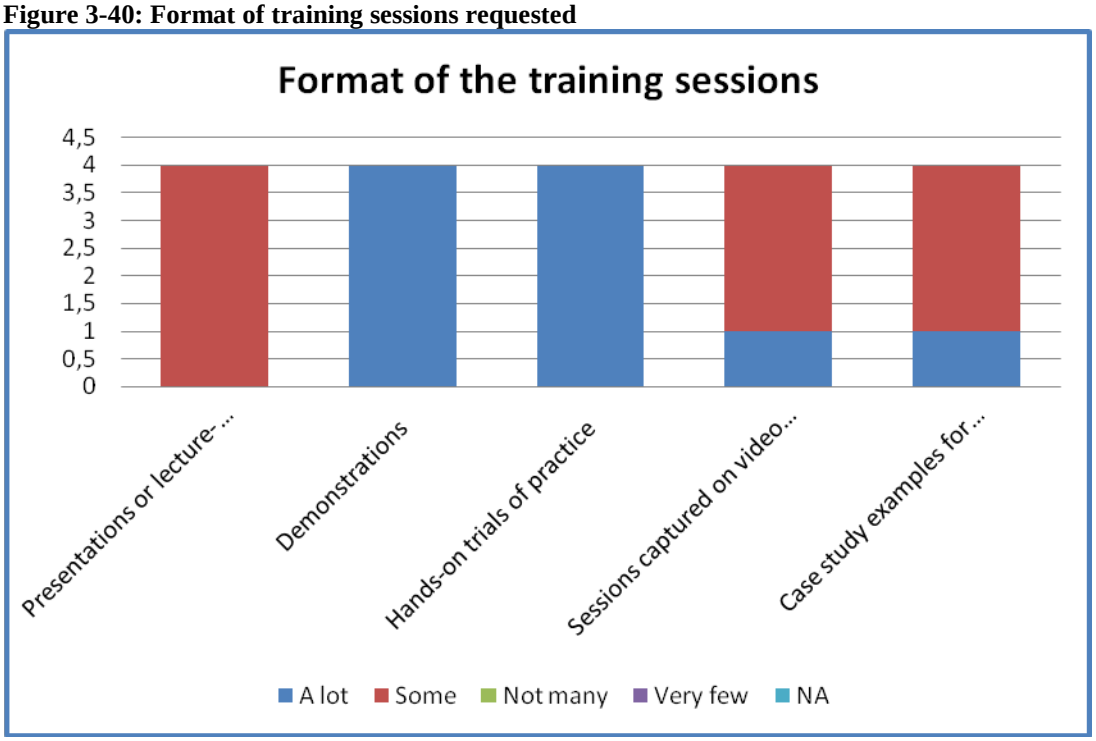


The types of practices that trainers and partners would like covered in the training sessions the most are “Review and reflect” and “This is what I’ve done and how I’ve done it”.

Format of training sessions

Trainers and partners indicated the format of training sessions that they would like. Their responses are shown in Figure 3-40.

Figure 3-40: Format of training sessions requested



The figure shows that most trainers and partners would welcome demonstrations and hands-on trials of practice as their favourite format for training sessions.

4. ITALY IN CONTEXT

Total responses

The total number of responses from teachers, trainers and partners in Italy was 9. The responses by country are shown in Table 4-1.

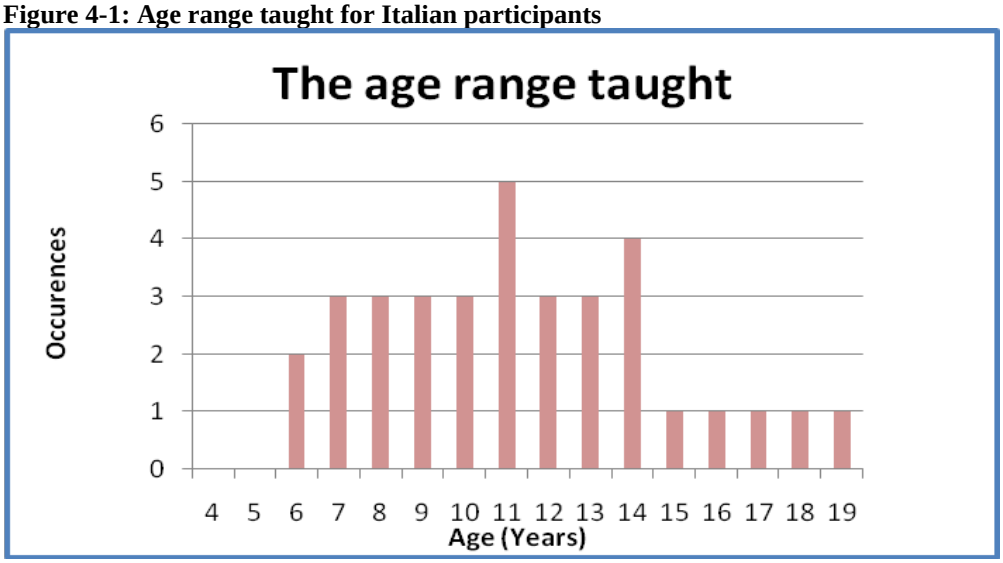
Country	Total Number of responses
Italy	9
	7 Teachers
	2 Partners and Trainers

Table 4-1: Responses by country and target group

The age range taught

The age range taught spans from 4 to 19 years. The majority of teachers teach in the age range from 6 to 14 years. The range is detailed in Figure 4-1.

Figure 4-1: Age range taught for Italian participants

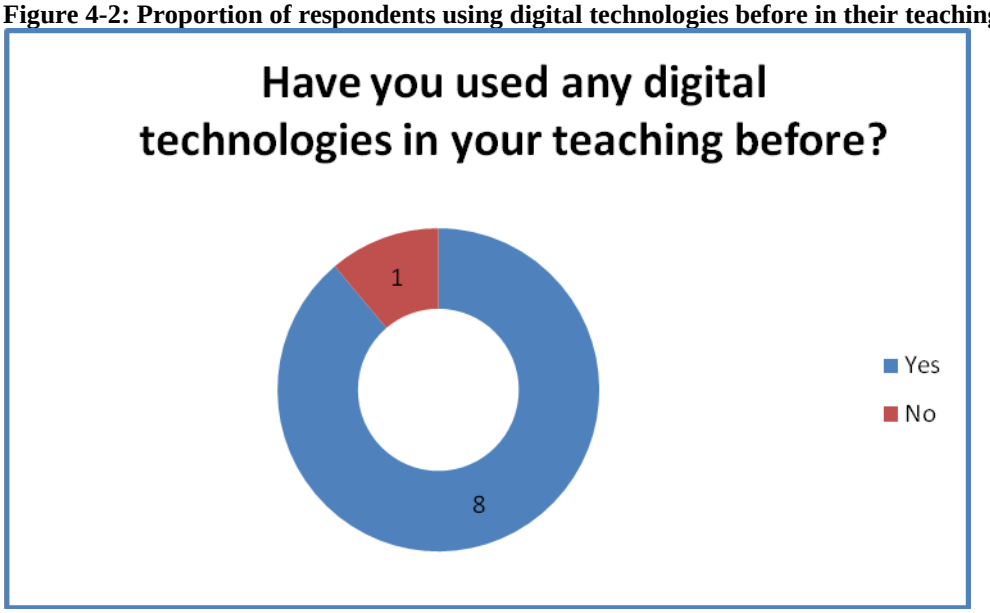


The subjects taught by most teachers are science and technology, languages and literature, history and philosophy. Of the total number of 7 teachers, 6 reported that they had classes including learners with special educational needs, 5 with learners with communication needs, and 6 with classes with special support teachers.

Prior use of digital technologies in teaching

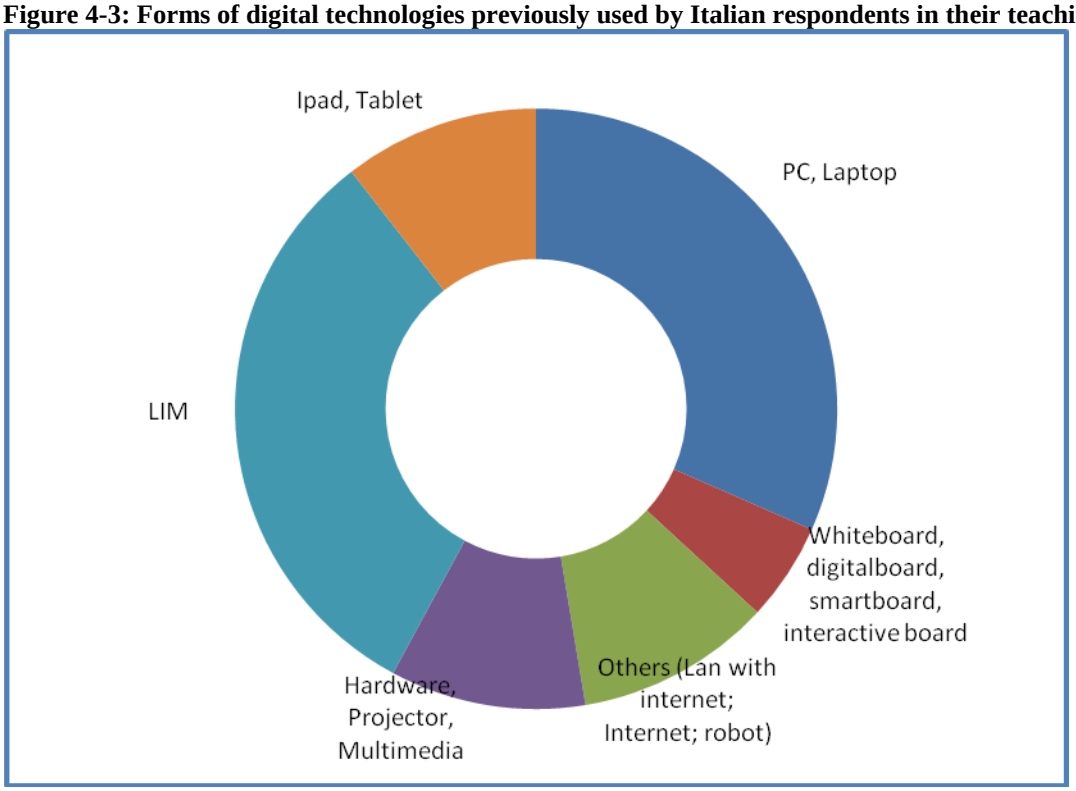
Most respondents indicated that they had used digital technologies before in their teaching (in 8 out of the 9 cases). The proportion is shown in Figure 4-2.

Figure 4-2: Proportion of respondents using digital technologies before in their teaching



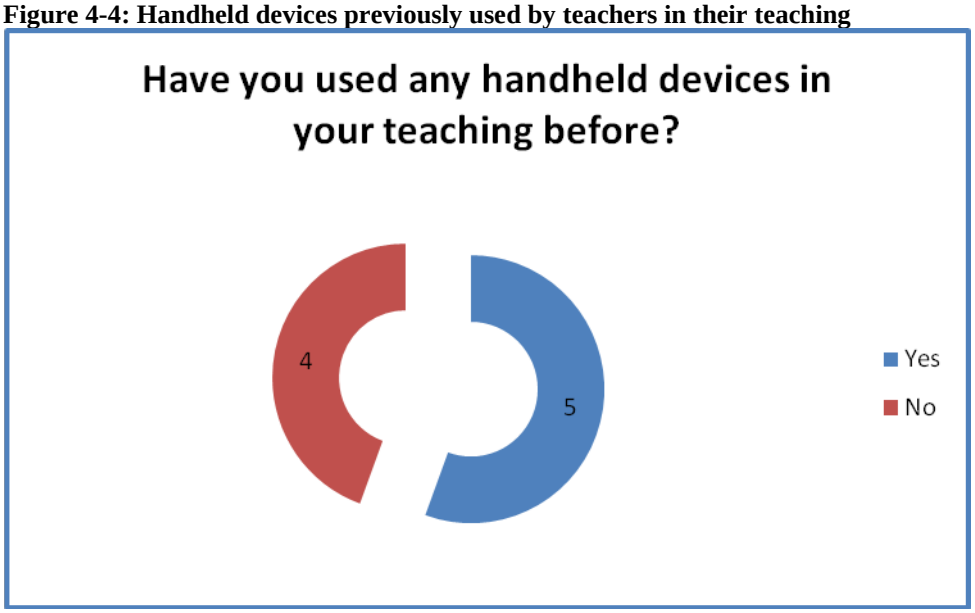
This figure shows that the majority of the participants reported using digital technologies in their teaching before. Most prior use had been with personal computers (PCs) or laptops, and interactive whiteboards (LIM). Details of responses are shown in Figure 4-3.

Figure 4-3: Forms of digital technologies previously used by Italian respondents in their teaching



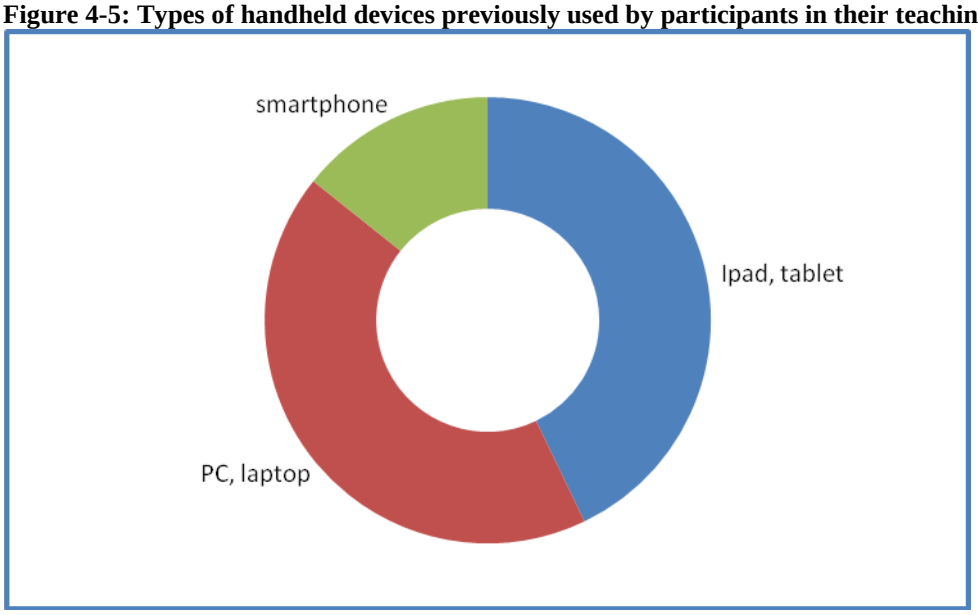
This figure shows that the majority of participants reported using interactive whiteboards (LIM) and PCs or laptops in their teaching. Most respondents indicated that they had used handheld devices in their teaching previously. The proportion is shown in Figure 4-4.

Figure 4-4: Handheld devices previously used by teachers in their teaching



This figure shows that most respondents reported to have previously used handheld devices in their teaching. Where handheld devices had been used before, most were either iPads or tablets. Figure 4-5 shows the forms of handheld devices used and their proportions.

Figure 4-5: Types of handheld devices previously used by participants in their teaching

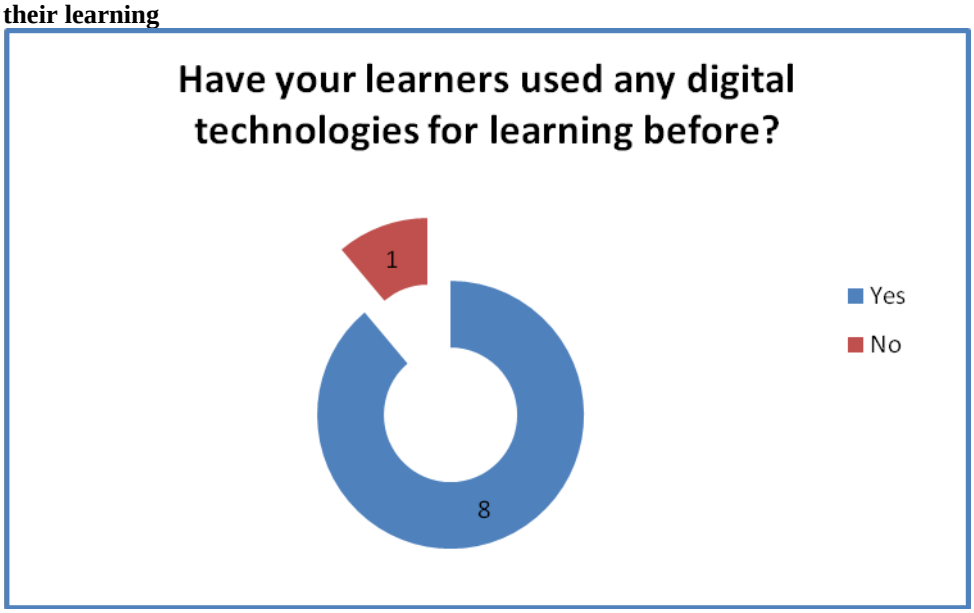


This figure shows that most of the respondents had previously used iPads or tablets and PCs or laptops in their teaching.

Prior use of digital technologies by learners

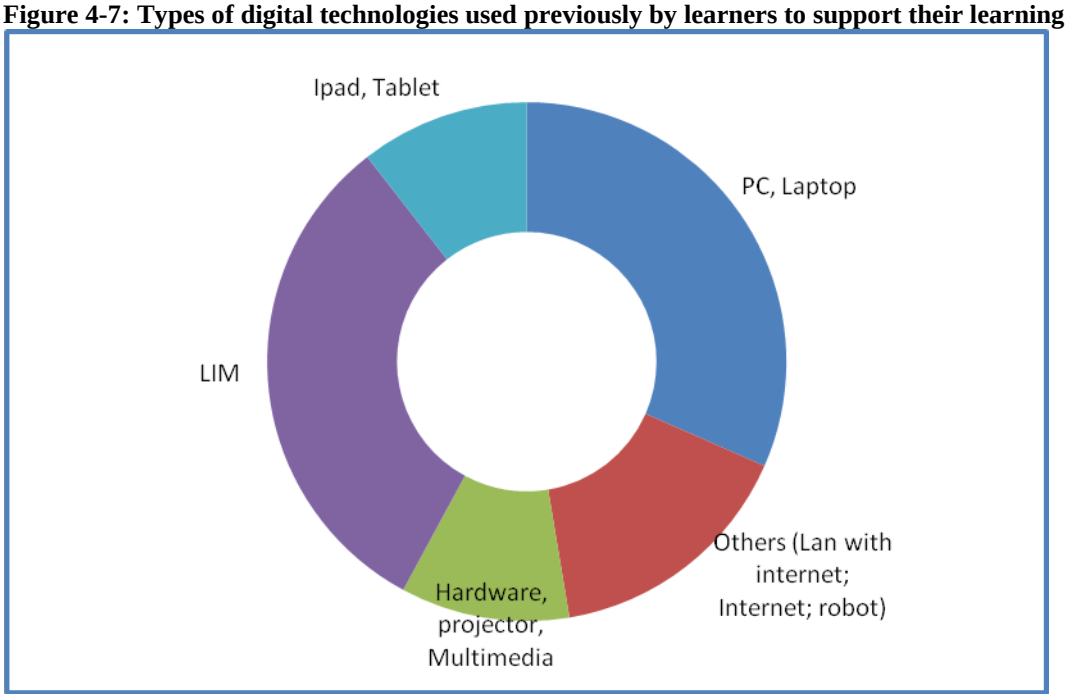
Most participants indicated that learners had used some forms of digital technologies before to support their learning. Of the 9 participants, 8 indicated that this was the case. The proportion is shown in Figure 4-6.

Figure 4-6: Proportion of teachers indicating learners have previously used digital technologies to support their learning



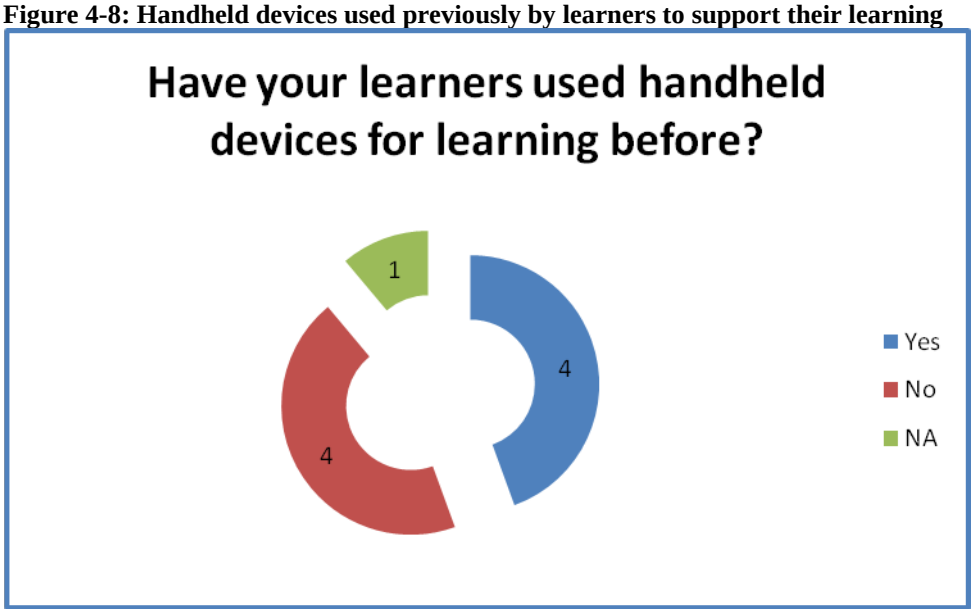
This figure shows a significant proportion of respondents indicating that their learners have previously used digital technologies to support their learning. The most common forms of digital technologies previously used have been PCs, laptops and interactive whiteboards (LIM). The proportions reported are shown in Figure 4-7.

Figure 4-7: Types of digital technologies used previously by learners to support their learning



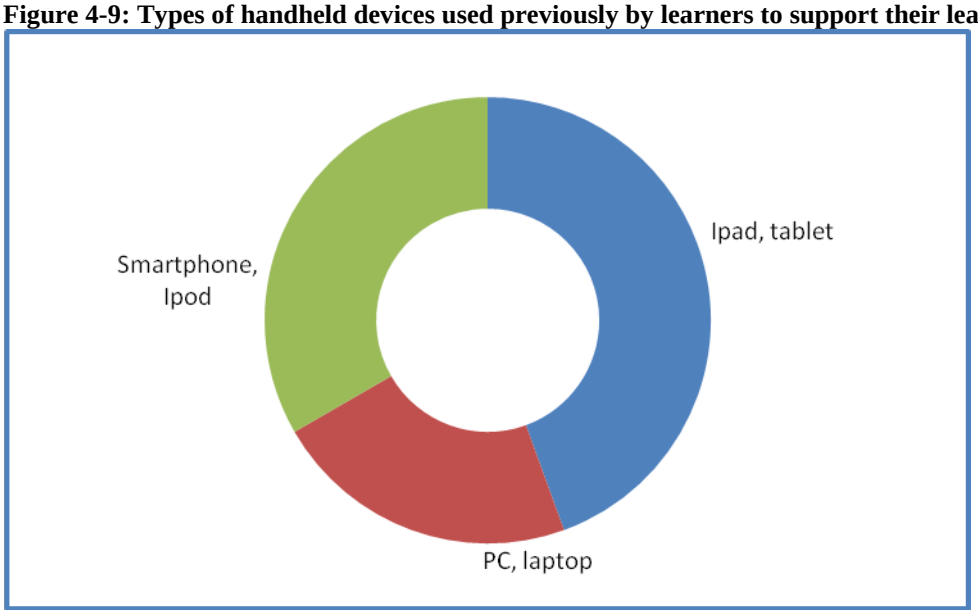
This figure shows that a significant proportion of respondents used interactive whiteboards (LIM) and PCs or laptops to support their learning. In only 4 cases have learners used handheld devices before for this purpose. The proportion is shown in Figure 4-8.

Figure 4-8: Handheld devices used previously by learners to support their learning



This figure shows that half of the respondents reported that their learners have used handheld devices to support their learning. In most cases, these have been iPads, tablets and smartphones. Details of responses are shown in Figure 4-9.

Figure 4-9: Types of handheld devices used previously by learners to support their learning

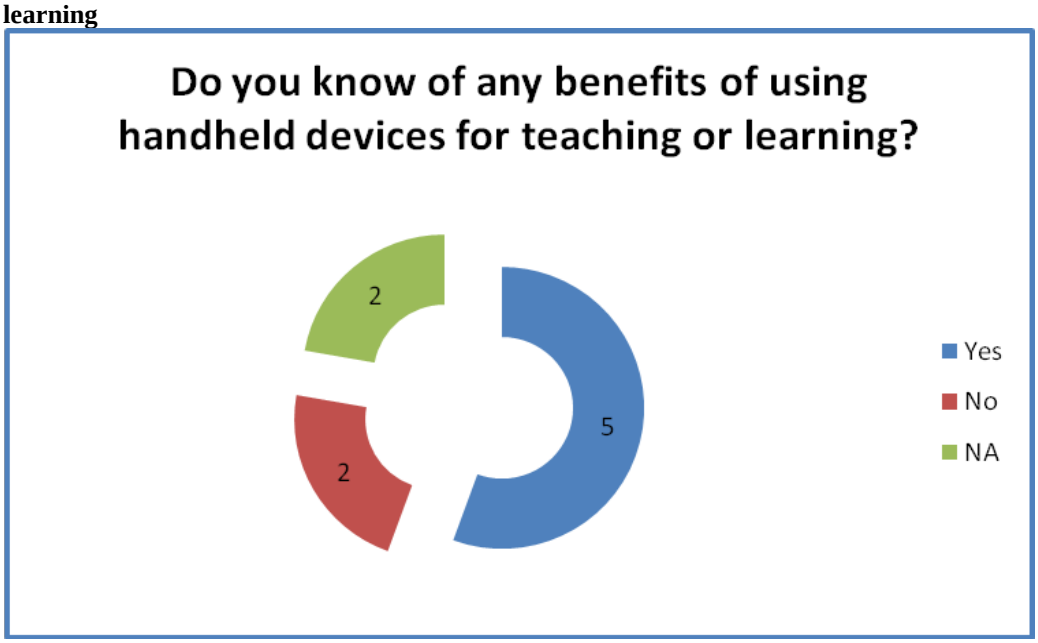


This figure shows that most of the respondents reported that their learners have used iPads or tablets to support their learning.

Benefits and issues when using handheld devices

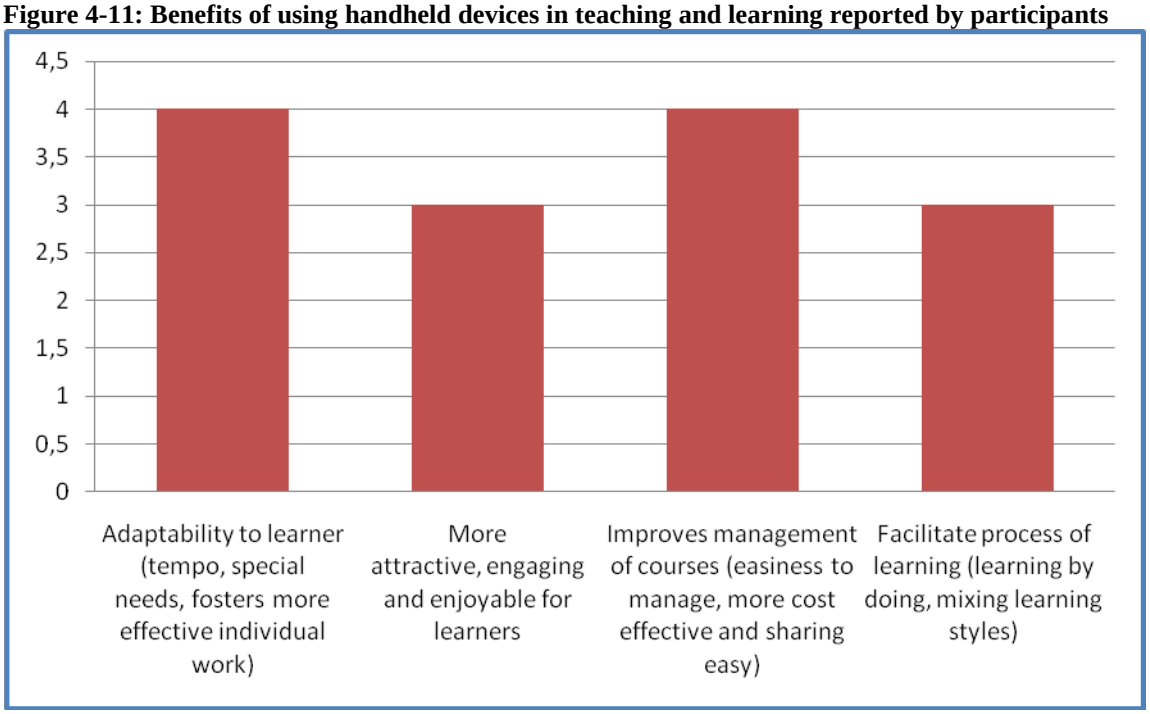
Most of participants reported that they already knew of benefits arising from using handheld devices to support learning. The proportion of responses is shown in Figure 4-10. It should be noted that the teachers involved in this initiative, therefore, are generally already aware of issues and ways of using digital technologies in teaching and are active in using them within their schools. It is clear from the previous report that this is not a representative population of teachers from across Italy, and the needs of this cohort, therefore, are not likely to be representative of the wider population.

Figure 4-10: Proportion of participants knowing of benefits of using handheld devices in teaching and learning



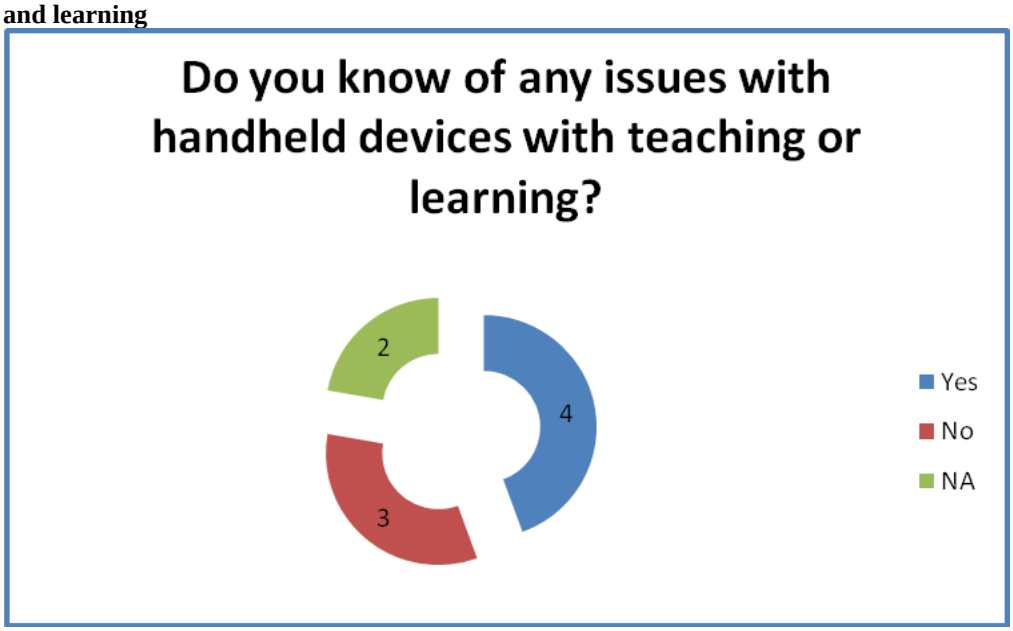
This figure indicates that most participants know of benefits of using handheld devices for teaching and learning. Participants reported four forms of benefits: adaptability to the learner; attractiveness and engagement; improving the management of courses; and facilitating the process of learning. Details of responses are shown in Figure 4-11.

Figure 4-11: Benefits of using handheld devices in teaching and learning reported by participants



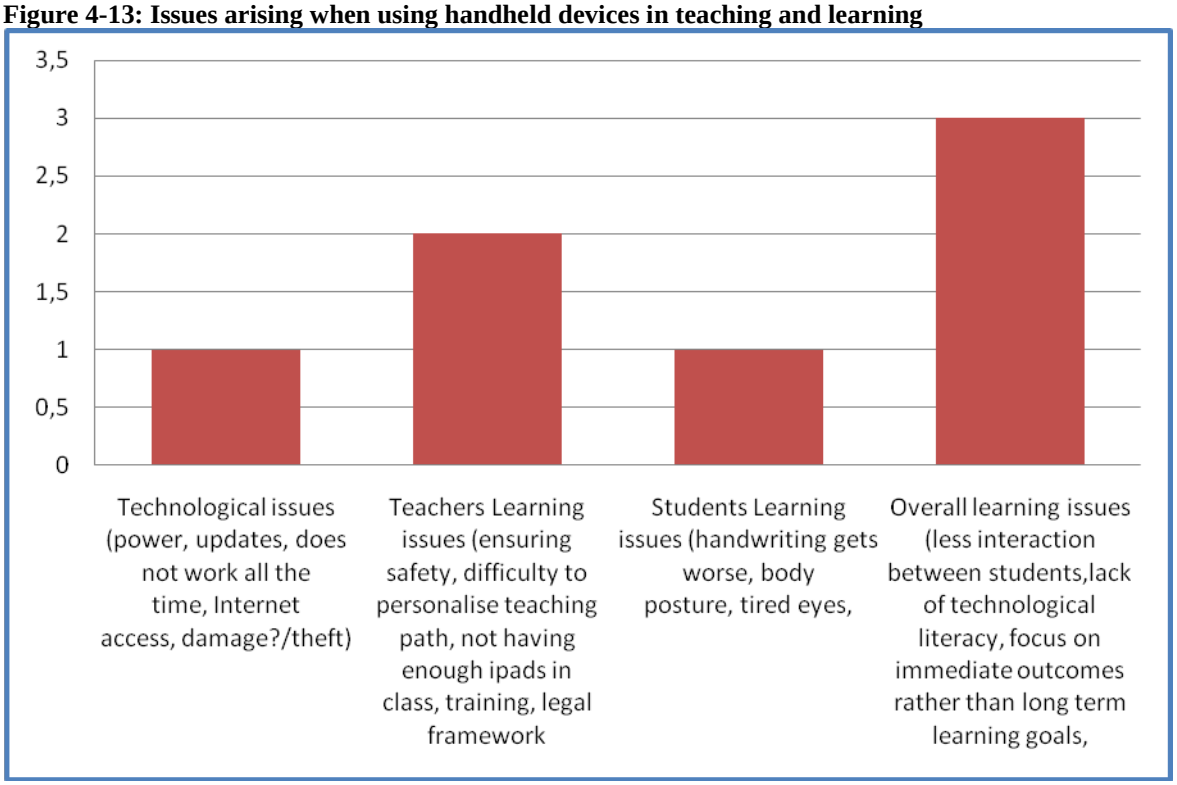
This figure shows that the benefits of using handheld devices reported the most were adaptability to the learner and improvement of management of courses. Of the 9 participants, 4 reported issues arising when handheld devices are used for teaching and learning. The proportion of responses is shown in Figure 4-12.

Figure 4-12: Proportion of responses indicating issues arising when using handheld devices in teaching and learning



This figure shows that the majority of respondents know of issues arising when handheld devices are used for teaching and learning. Participants reported three forms of issues arising: technological issues; teacher awareness and training issues; and learning issues. Details are shown in Figure 4-13.

Figure 4-13: Issues arising when using handheld devices in teaching and learning

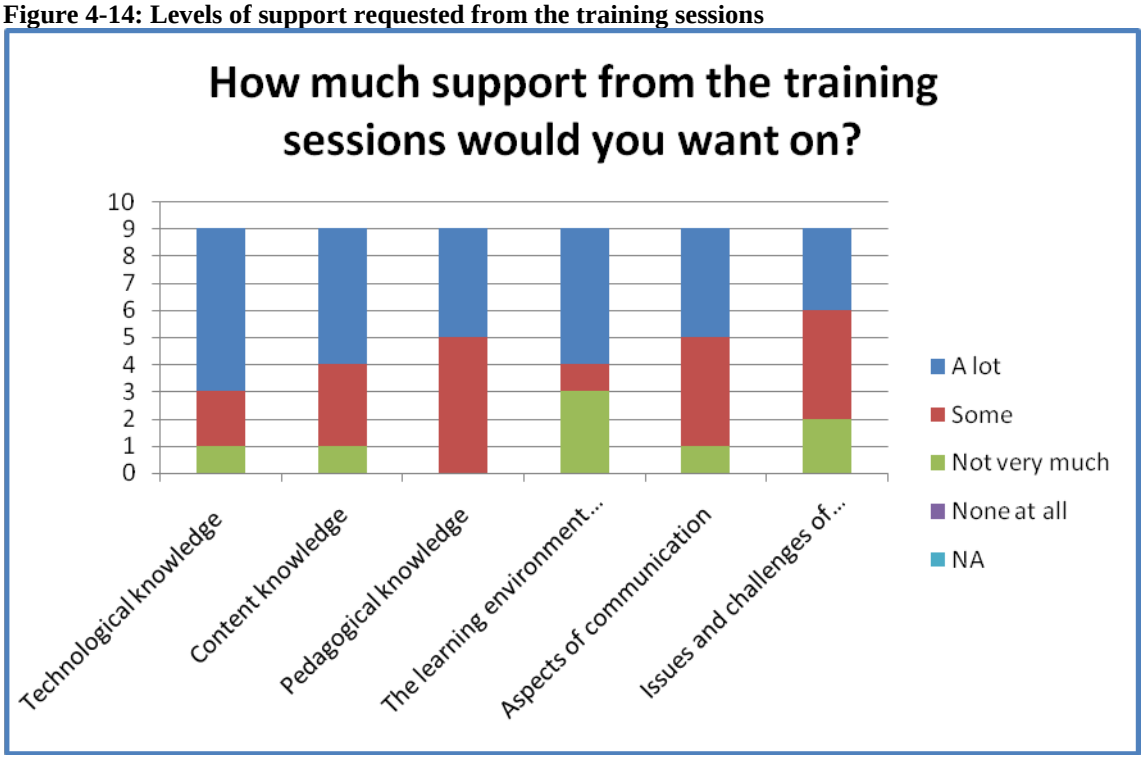


The figure above shows that the most significant issue highlighted when using handheld devices is learning issues, which concerns important aspects, such as forms and levels of interaction between learners, technological literacy, long-term or immediate learning goals.

Forms of support from the training course

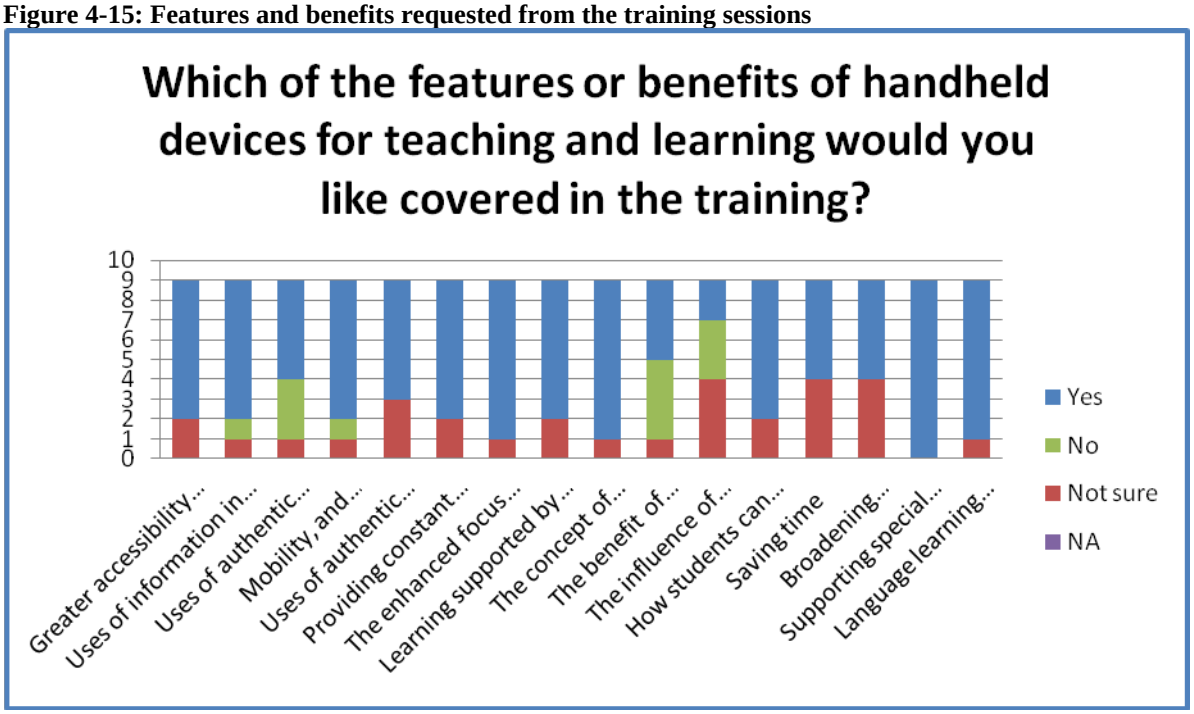
Participants indicated that the training course should provide a wide range of different forms of support. These are shown in Figure 4-14.

Figure 4-14: Levels of support requested from the training sessions



This figure shows that the higher proportions of responses indicate particular support from the training sessions on pedagogical knowledge. Participants also indicated that a wide range of features and benefits should be covered in the training sessions. Details are shown in Figure 4-15.

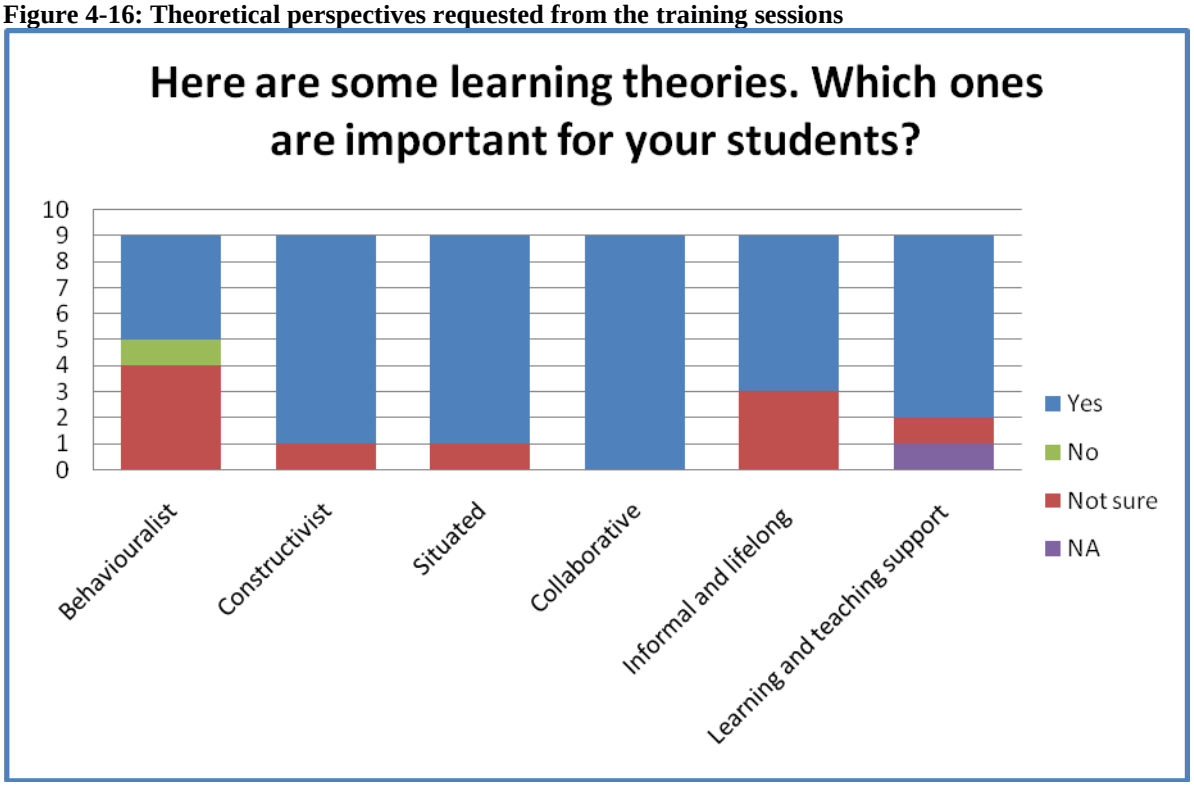
Figure 4-15: Features and benefits requested from the training sessions



This figure indicates that the features or benefits of handheld devices requested the most are the enhanced focus gained from mobile learning moments and approaches for supporting special

educational needs. In terms of theoretical backgrounds, participants indicated different levels of need in this respect. Details of responses are shown in Figure 4-16.

Figure 4-16: Theoretical perspectives requested from the training sessions

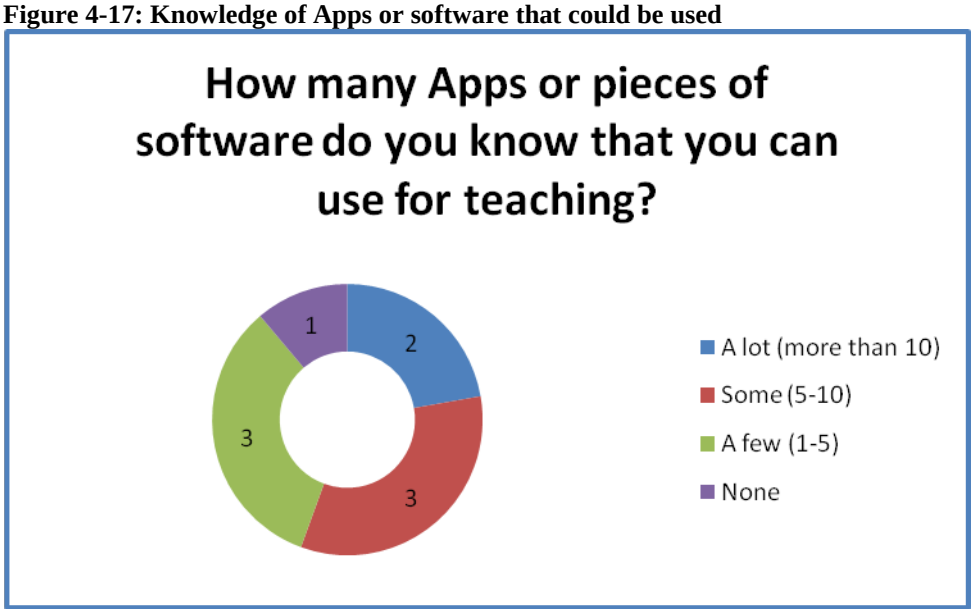


The figure shows a significant proportion of preference for collaborative learning approaches from a theoretical perspective within the training sessions.

Software resources and activities

Some participants indicated that they were aware of some software resources that could be used in teaching and learning. Their responses are shown in Figure 4-17.

Figure 4-17: Knowledge of Apps or software that could be used



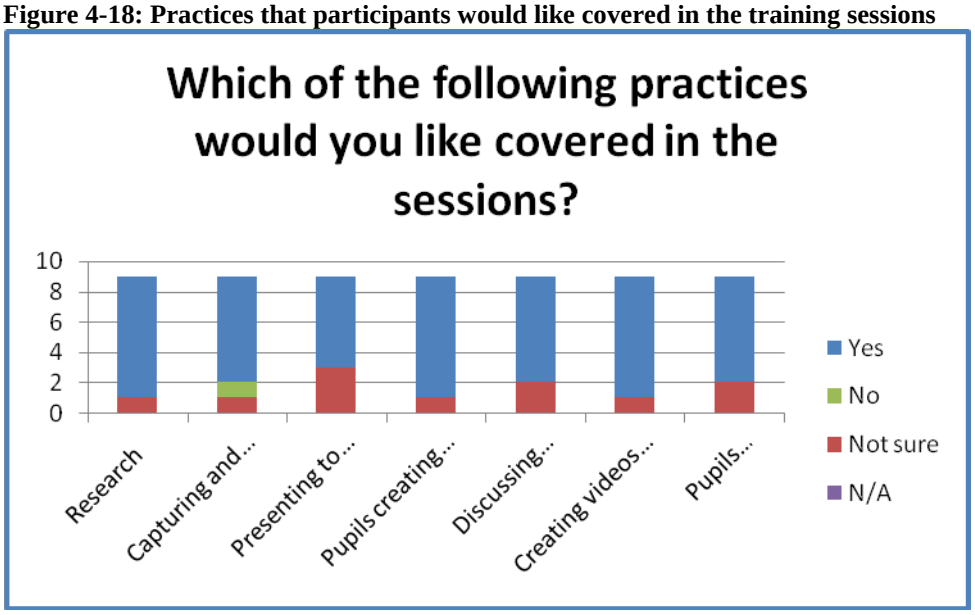
The figure above shows that most participants have knowledge of "some" or "a few" Apps or software that could be used in their teaching. Those participants who know of Apps or software indicated details of these, and why they use them. These are listed in Table 4-2.

App or piece of software	Why you use it
Audacity	Editing audio
C/C++	to program Pic
Clicker	Open software to create personalized didactic units
ePico	Software to read e-books
Erikson maps	Facilitate the links
Geogebra	Simplifies the process of learning geometry
Microsoft office	Easy to use and the students know how to use it
NXT Programming	to program mindstorm Nxt Robot
pcb	to design an electronic board
Play history, play geography	Materials easy to use on the LIM
softwares for students with hearing difficulties	to support students with hearing difficulties
SuperMaps	to create multimedia maps
Tuxpaint	Simple graphic

Table 4-2: Apps or software that are used by teachers already

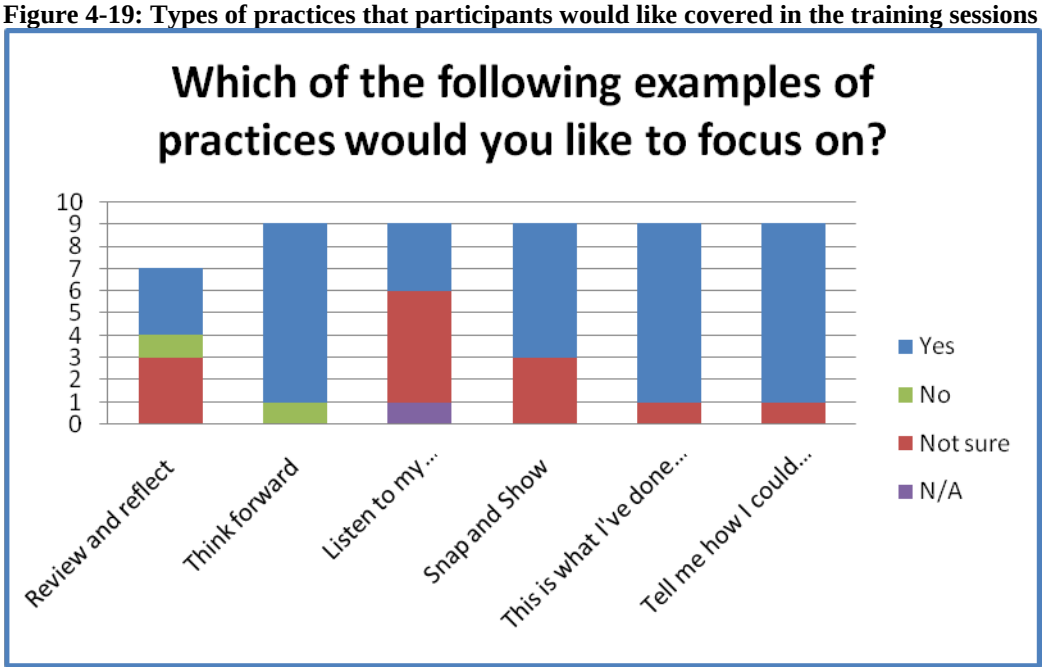
Participants indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 4-18.

Figure 4-18: Practices that participants would like covered in the training sessions



The practices that most of the participants would like covered in the training sessions are research, pupils creating their own notes and creating videos for presentations. Participants also indicated examples of practices that they would like covered. Their responses are shown in Figure 4-19.

Figure 4-19: Types of practices that participants would like covered in the training sessions

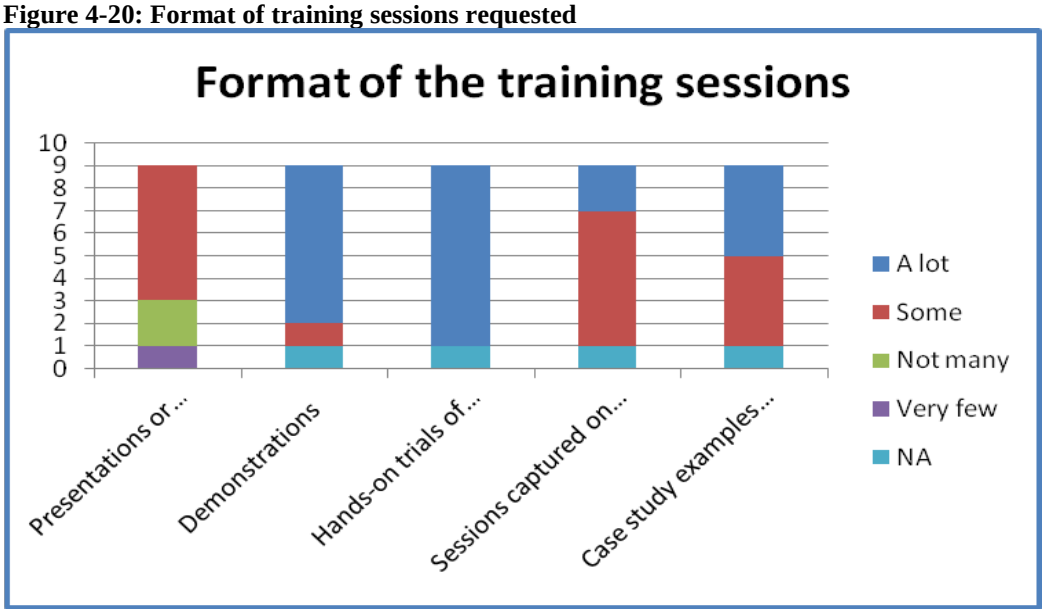


The types of practices that participants would like covered in the training sessions the most are "think forward", "this is what I've done and how I've done it" and "tell me how I could improve this".

Format of training sessions

Participants indicated the format of training sessions that they would like. Their responses are shown in Figure 4-20.

Figure 4-20: Format of training sessions requested



The figure shows that a significant proportion of respondents would welcome hands-on trials of practice and demonstrations as their favourite format for training sessions.

5. GREECE IN CONTEXT

Total responses

The total number of responses from teachers, trainers and partners in Greece was 5. The responses by country are shown in Table 5-1.

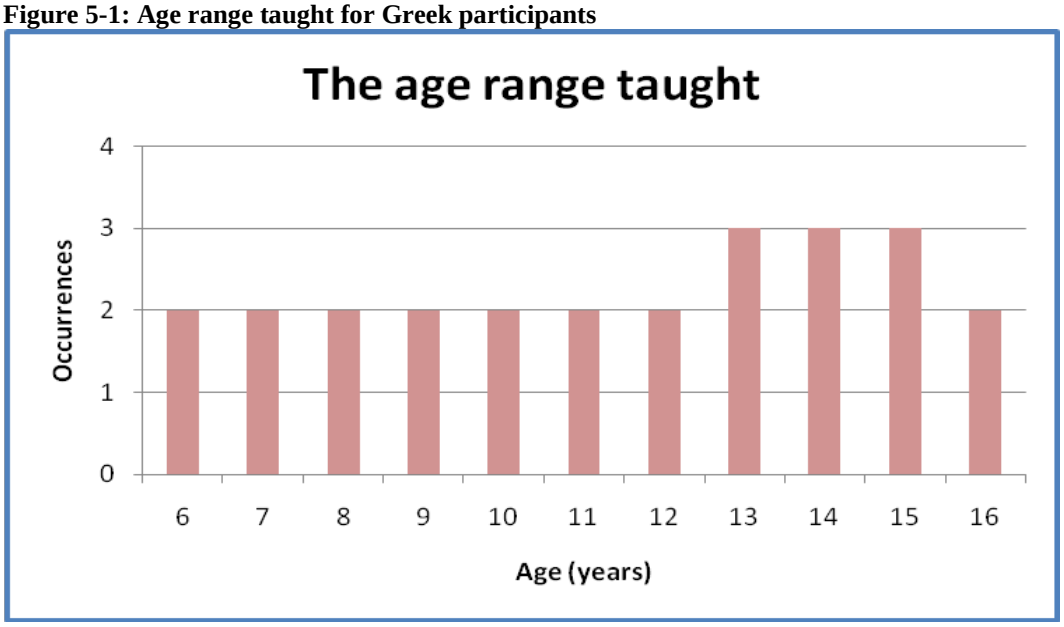
Country	Total Number of responses
Greece	5 teachers

Table 5-1: Responses by country and target group

The age range taught

The age range taught spans from 6 to 16 years. The range is detailed in Figure 5-1.

Figure 5-1: Age range taught for Greek participants

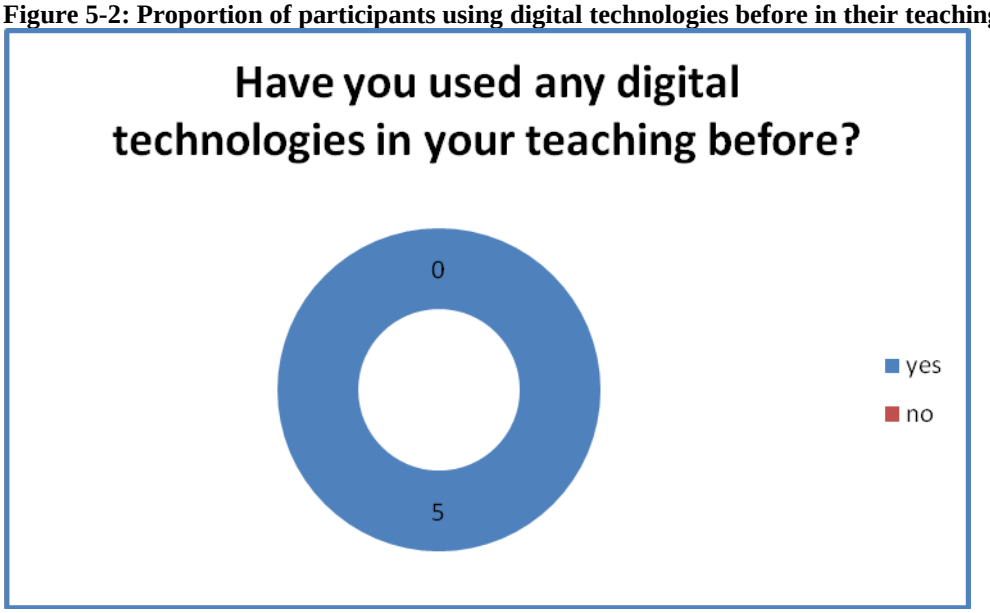


The subjects taught by most teachers are science and technology, and others (special educational needs and management). Of the total number of 5 teachers, 2 reported that they had classes including learners with special educational needs, 2 with learners with communication needs, and 2 with classes with special support teachers.

Prior use of digital technologies in teaching

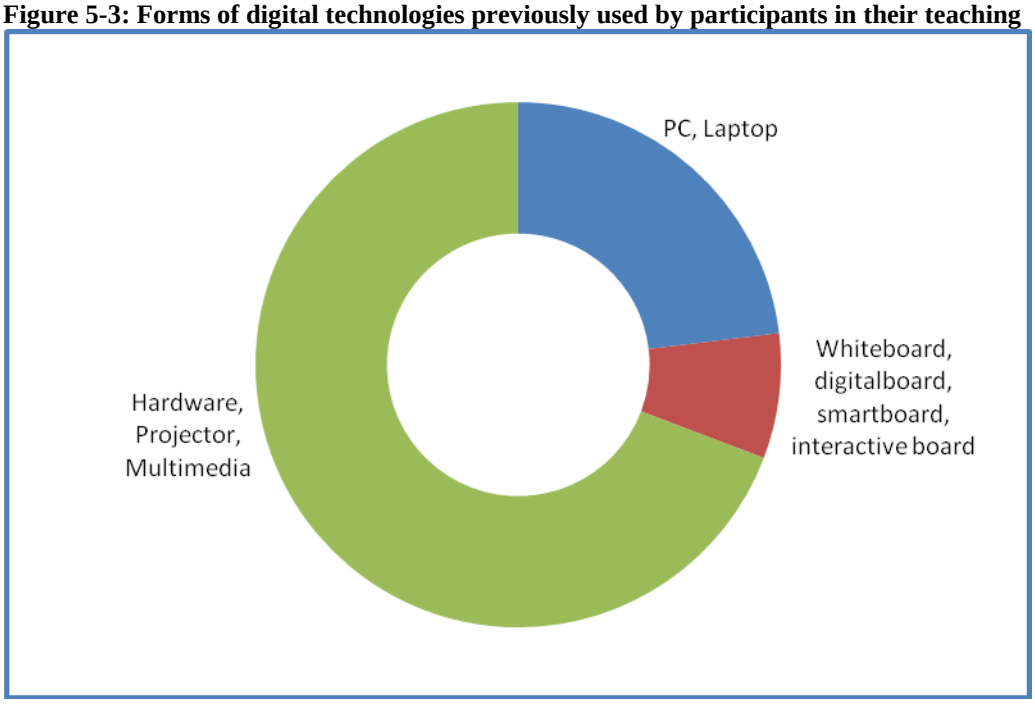
All participants indicated that they had used digital technologies before in their teaching. The proportion is shown in Figure 5-2.

Figure 5-2: Proportion of participants using digital technologies before in their teaching



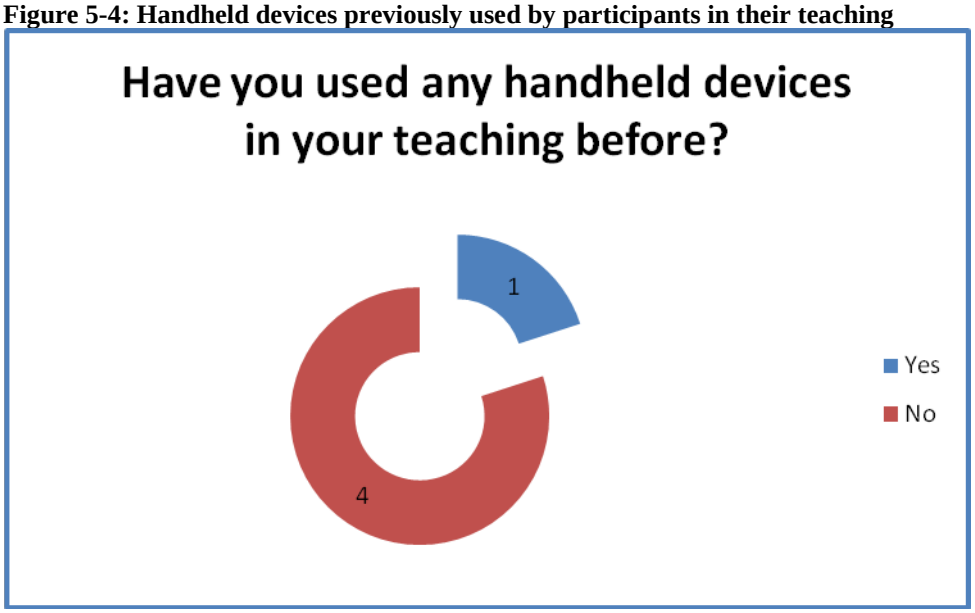
Most prior use has been with hardware peripherals such as projectors and multimedia. Details of responses are shown in Figure 5-3.

Figure 5-3: Forms of digital technologies previously used by participants in their teaching



Most participants indicated that they had not used handheld devices in their teaching previously. The proportion is shown in Figure 5-4.

Figure 5-4: Handheld devices previously used by participants in their teaching

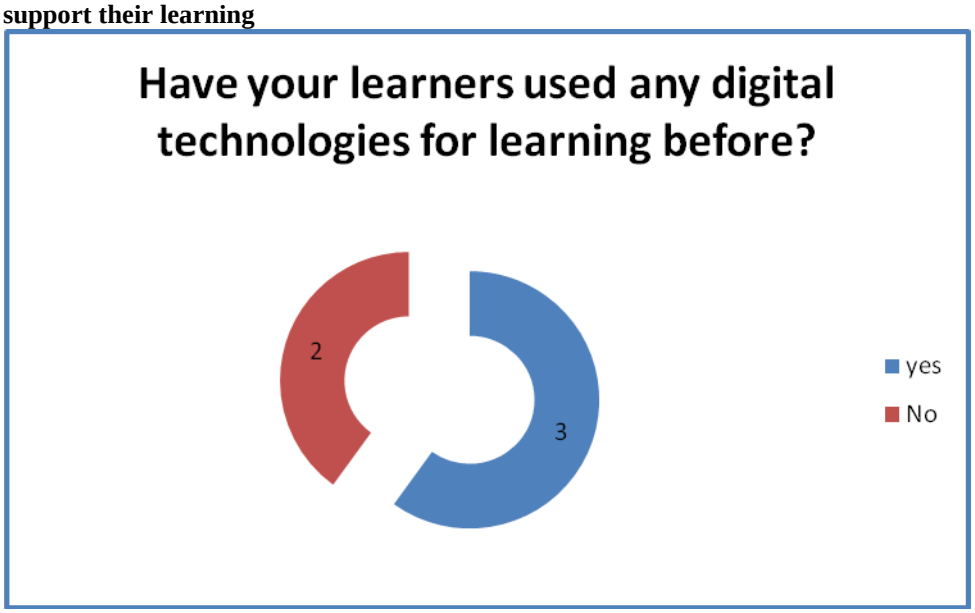


The only participant responding 'yes' reported that the handheld devices most used were experimental instruments for physics and chemistry.

Prior use of digital technologies by learners

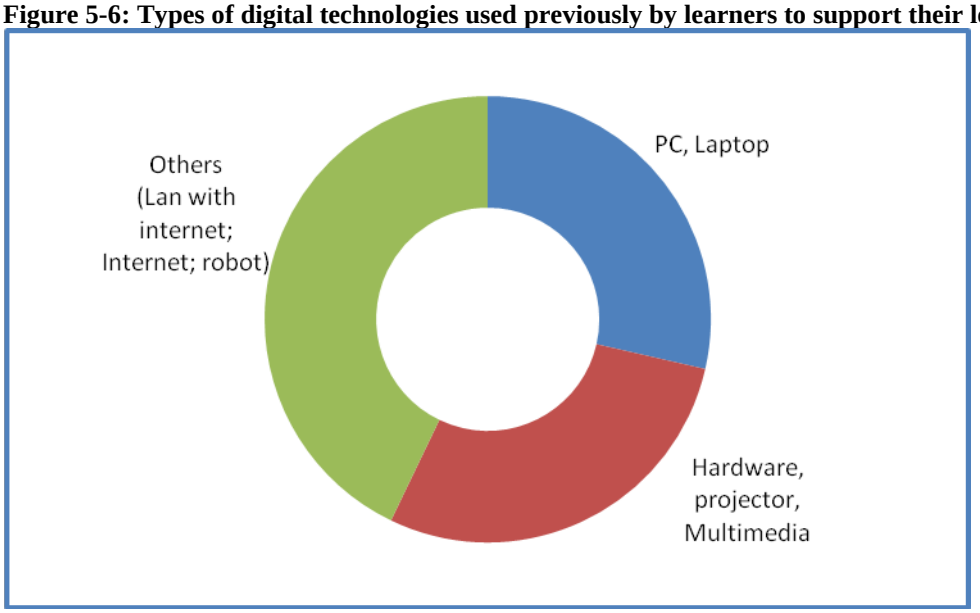
Most participants indicated that learners had used some forms of digital technologies before to support their learning. The proportion is shown in Figure 5-5.

Figure 5-5: Proportion of participants indicating learners have previously used digital technologies to support their learning



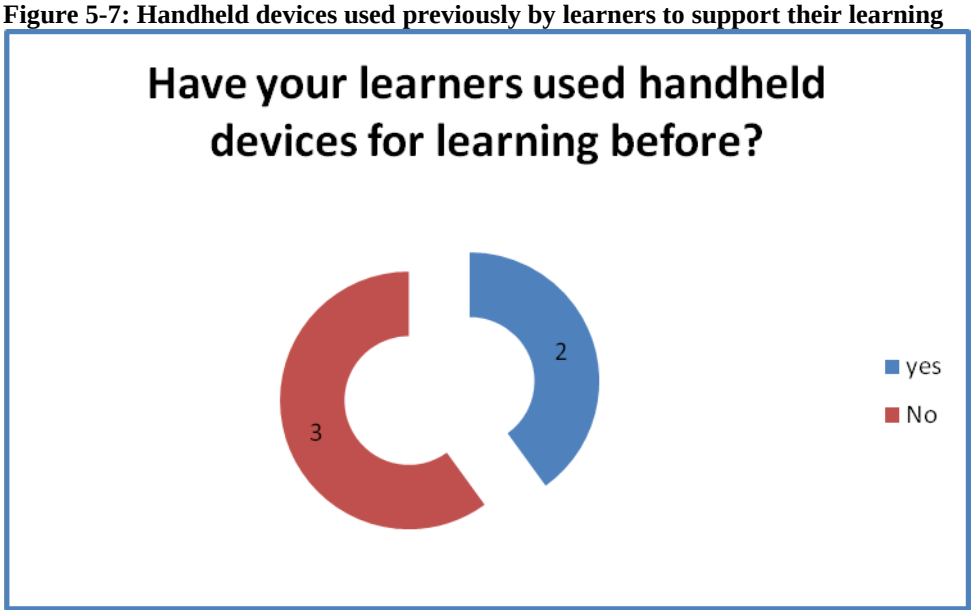
The most common forms of digital technologies previously used have been local area networks (LAN) supporting internet access. The proportions reported are shown in Figure 5-6.

Figure 5-6: Types of digital technologies used previously by learners to support their learning



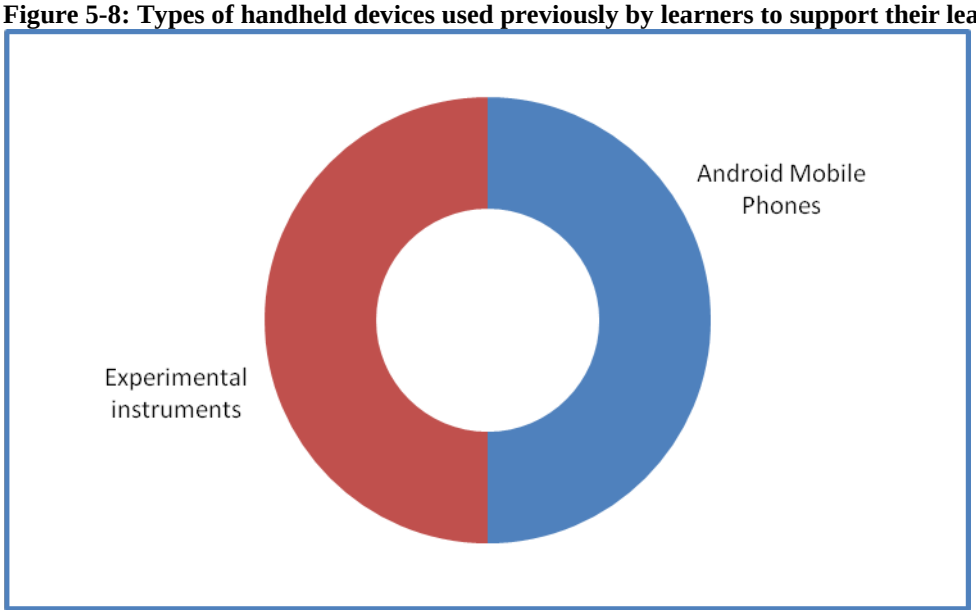
In 2 cases learners have used handheld devices before for this purpose. The proportion is shown in Figure 5-7.

Figure 5-7: Handheld devices used previously by learners to support their learning



In most cases, these have been experimental instruments and Android mobile telephones. Details of responses are shown in Figure 5-8.

Figure 5-8: Types of handheld devices used previously by learners to support their learning

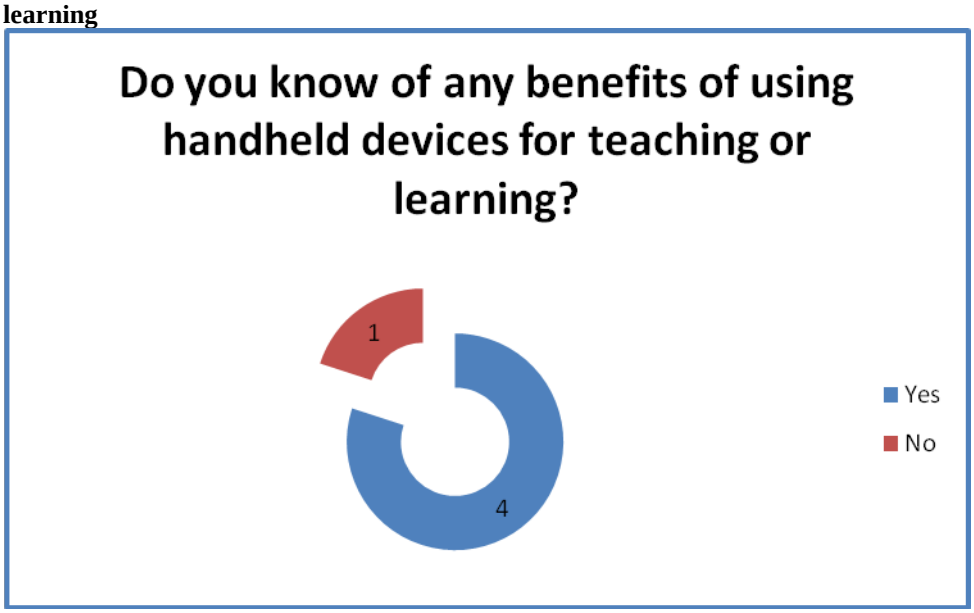


This figure shows that respondents reported that their learners had most used mobile telephones and experimental instruments.

Benefits and issues when using handheld devices

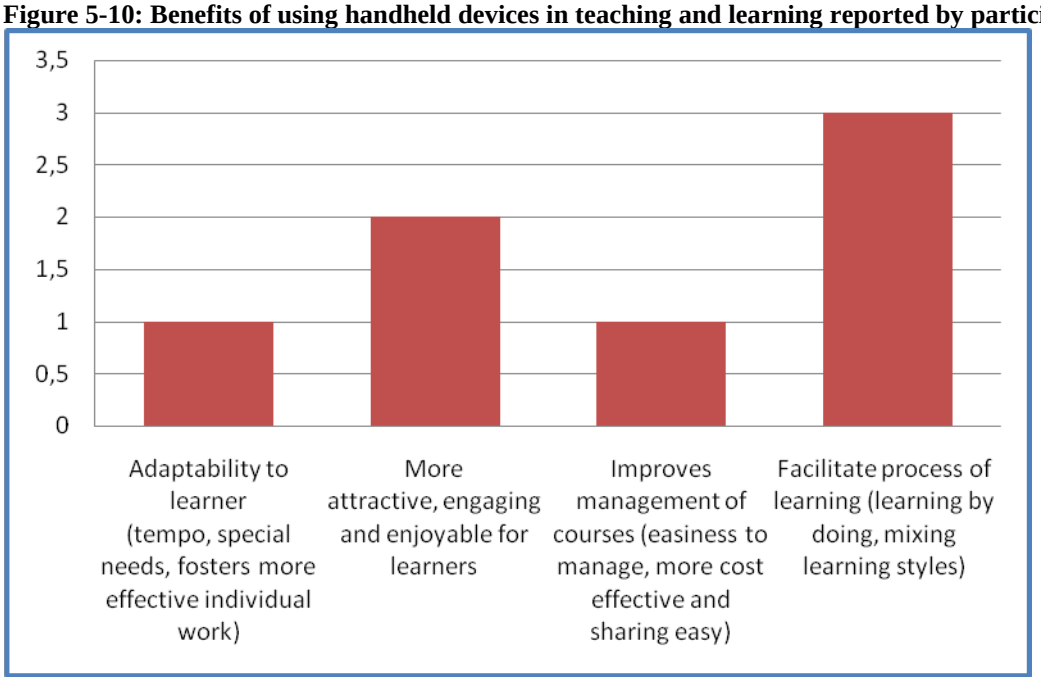
In 4 cases, participants reported that they already knew of benefits arising from using handheld devices to support learning. The proportion of responses is shown in Figure 5-9.

Figure 5-9: Proportion of participants knowing of benefits of using handheld devices in teaching and learning



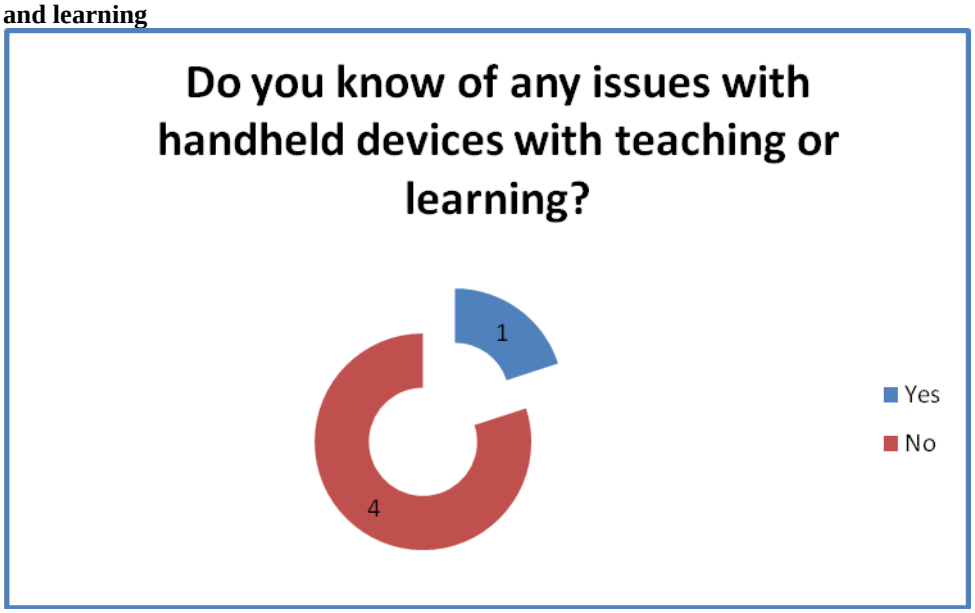
Participants reported four forms of benefits: adaptability to the learner; attractiveness and engagement; improving the management of courses; and facilitating the process of learning. Details of responses are shown in Figure 5-10.

Figure 5-10: Benefits of using handheld devices in teaching and learning reported by participants



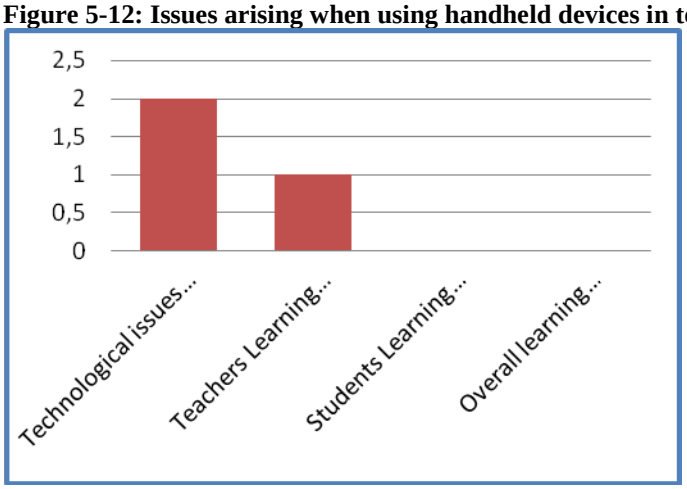
This figure shows that the benefit of using handheld devices reported the most was facilitating the process of learning. Of the 5 participants, only 1 reported issues arising when handheld devices are used for teaching and learning. The proportion of responses is shown in Figure 5-11.

Figure 5-11: Proportion of responses indicating issues arising when using handheld devices in teaching and learning



This figure shows that the majority of respondents know of issues arising when handheld devices are used in teaching and learning. Participants reported three forms of issues arising: technological issues; teacher awareness and training issues; and learning issues. Details are shown in Figure 5-12.

Figure 5-12: Issues arising when using handheld devices in teaching and learning

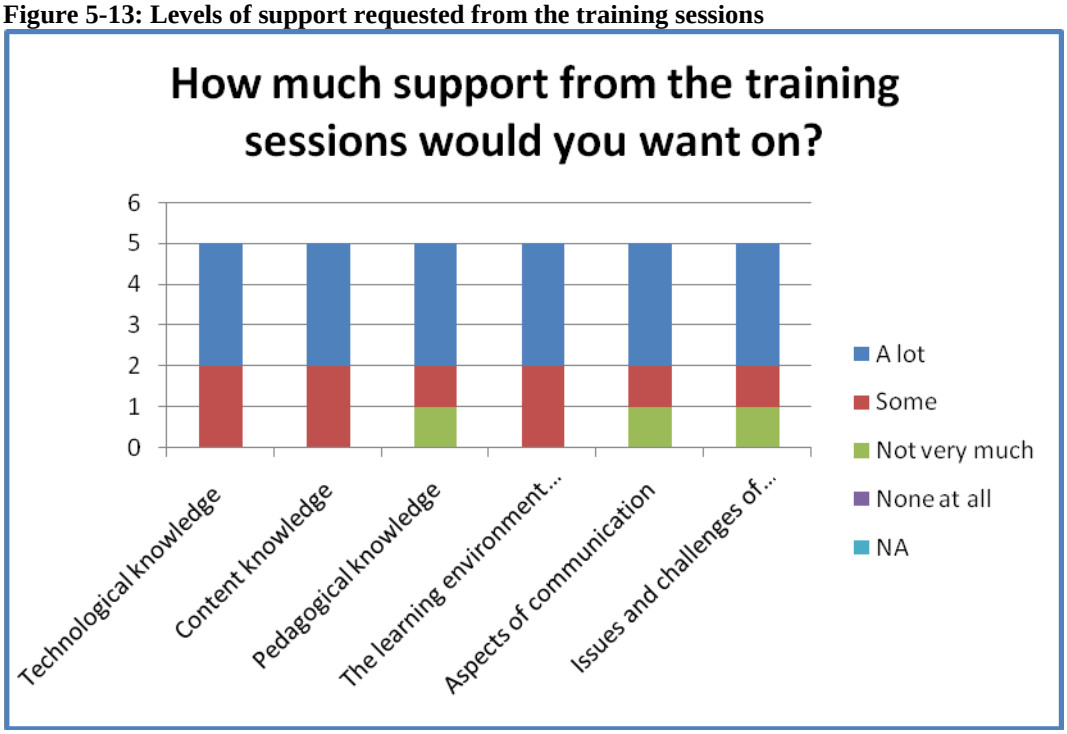


The figure above shows that the most significant issue reported arising when using handheld devices is technological.

Forms of support from the training course

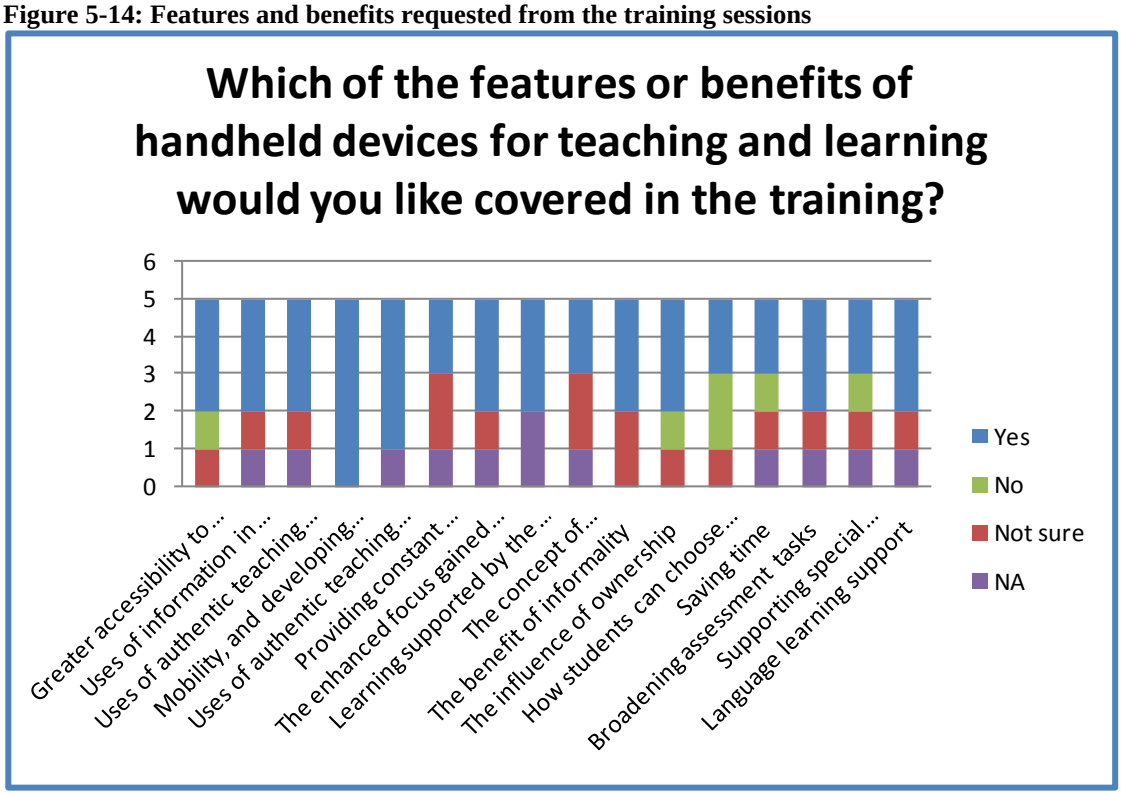
Participants indicated that the training course should provide a wide range of different forms of support. These are shown in Figure 5-13.

Figure 5-13: Levels of support requested from the training sessions



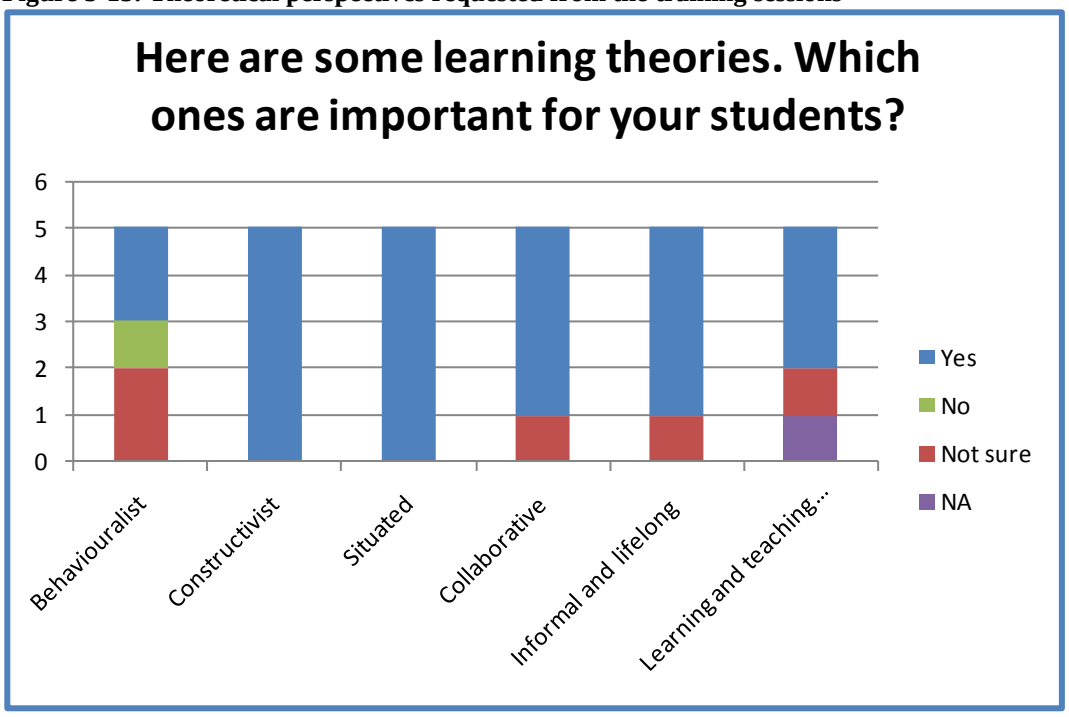
Participants also indicated that a wide range of features and benefits should be covered in the training sessions. Details are shown in Figure 5-14.

Figure 5-14: Features and benefits requested from the training sessions



In terms of theoretical background, participants indicated different levels of need in this respect. Details of responses are shown in Figure 5-15.

Figure 5-15: Theoretical perspectives requested from the training sessions

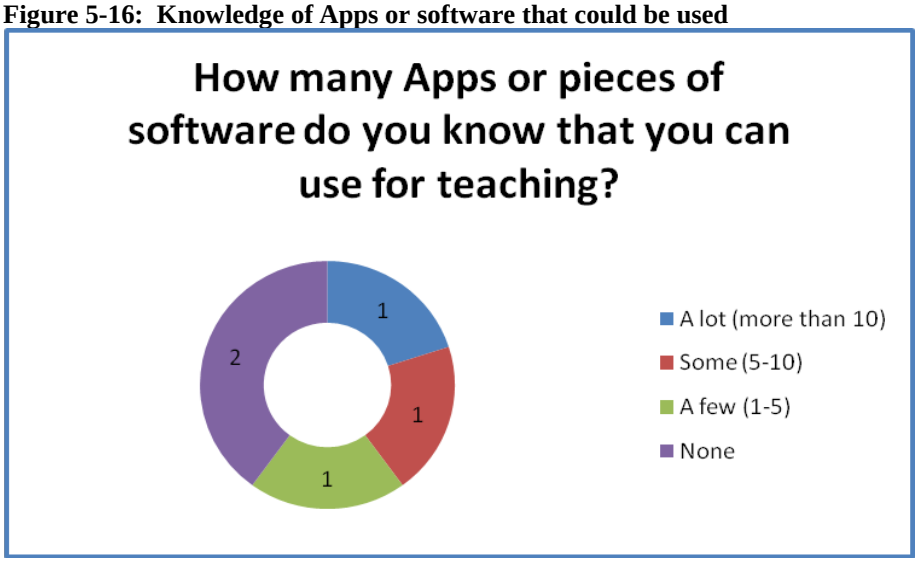


The approaches requested most commonly are those based on constructivist, situated, collaborative, informal and lifelong learning theories.

Software resources and activities

Some participants indicated that they were aware of some software resources that could be used in teaching and learning. Their responses are shown in Figure 5-16.

Figure 5-16: Knowledge of Apps or software that could be used



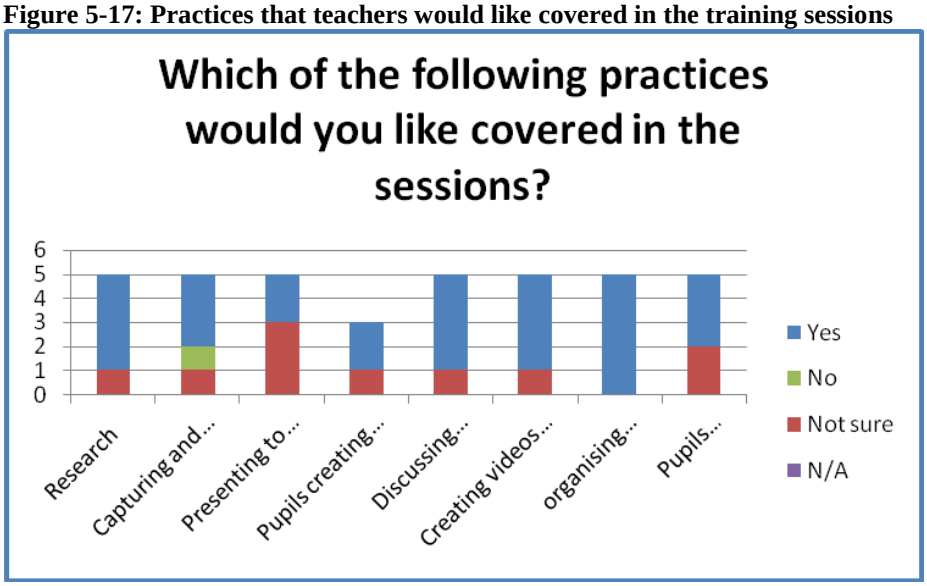
Those participants who know of Apps or software indicated details of these, and why they use them. These are listed in Table 5-2.

App or piece of software	Why you use it
Chronometers	Measuring time
Microsoft office	Easy to use and the students know how to use it
Moodle & Joomla	Course administration
Natural Sciences Software	Some experiments are dangerous in the real lab or impossible with the provided infrastructure
Probes	Measuring

Table 5-2: Apps or software that are used by teachers already

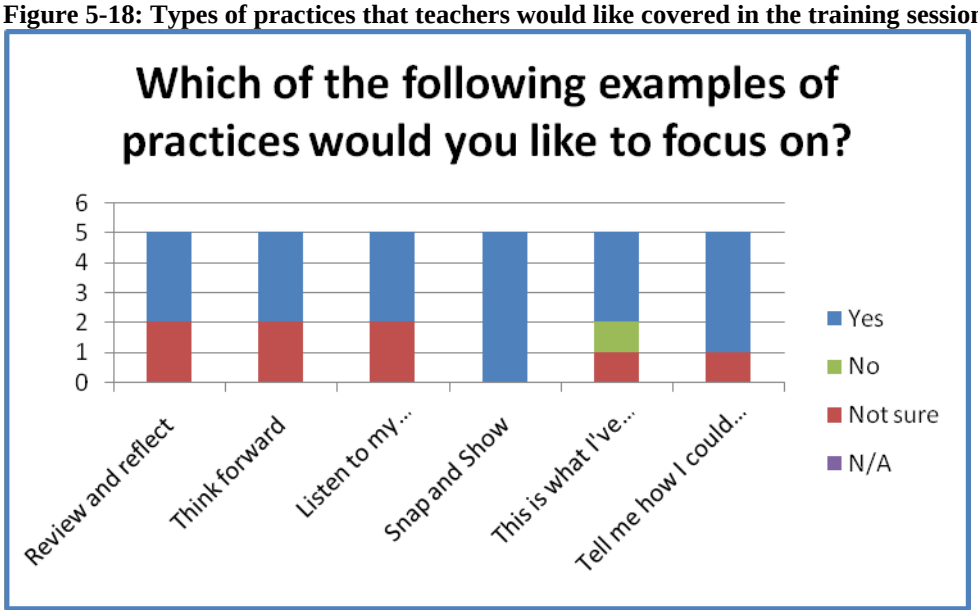
Participants indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 5-17.

Figure 5-17: Practices that teachers would like covered in the training sessions



The practice that most of the participants would like covered in the training sessions is organising notes and work. It should be noted that this option unfortunately only appeared in the questionnaire delivered to the Greek partners and teachers. Participants also indicated examples of practices that they would like covered. Their responses are shown in Figure 5-18.

Figure 5-18: Types of practices that teachers would like covered in the training sessions

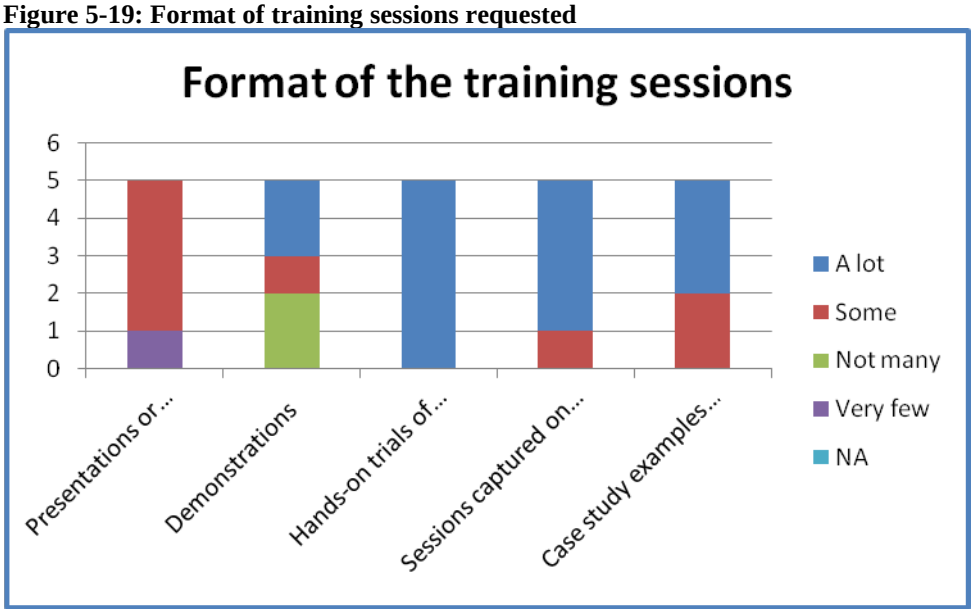


The types of practice that participants would like covered in the training sessions the most is "Snap and show".

Format of training sessions

Participants indicated the format of training sessions that they would like. Their responses are shown in Figure 5-19.

Figure 5-19: Format of training sessions requested



The figure shows that a significant proportion of respondents would welcome hands-on trials of practice as well as sessions captured on video for reviewing afterwards as their favourite formats for training sessions.

6. THE NETHERLANDS IN CONTEXT

Total responses

The total number of responses from teachers, trainers and partners in the Netherlands was 15. The responses by country are shown in Table 6-1.

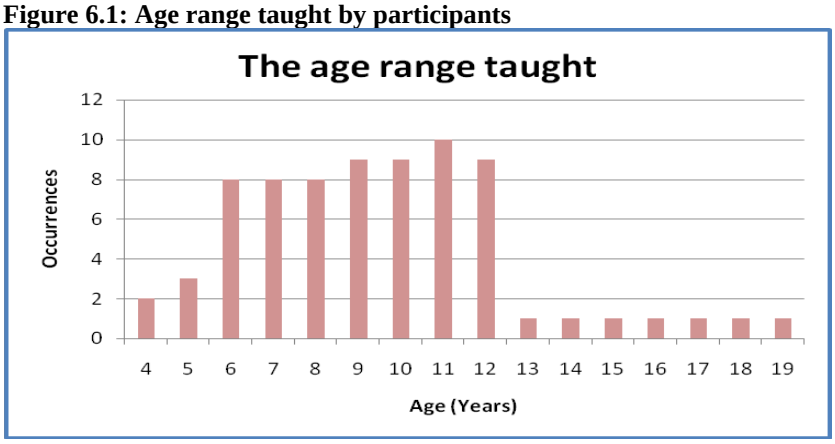
Country	Total Number of responses
The Netherlands	14 teachers
	1 trainer

Table 6-1: Responses by country and target group

The age range taught

The age range taught spans from 7 to 12 years. The range is detailed in Figure 6-1.

Figure 6.1: Age range taught by participants

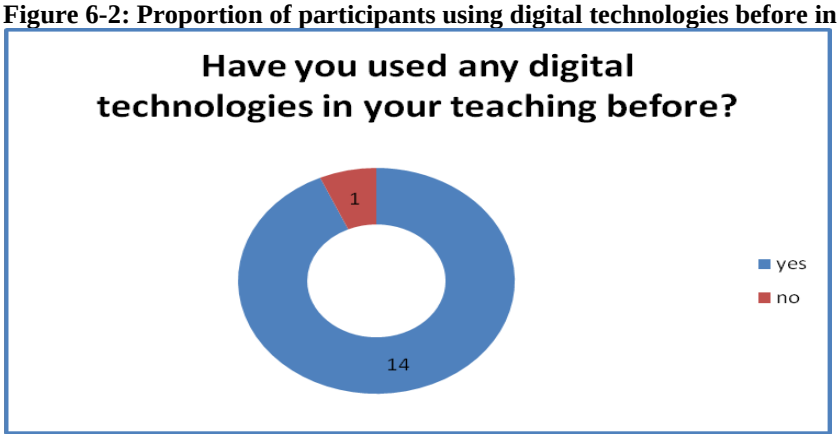


The subjects taught by most teachers are all subjects, mathematics, and languages and literature. Of the total number of 14 teachers, 12 reported that they had classes including learners with special educational needs, 3 with learners with communication needs, and 13 with classes with special support teachers.

Prior use of digital technologies in teaching

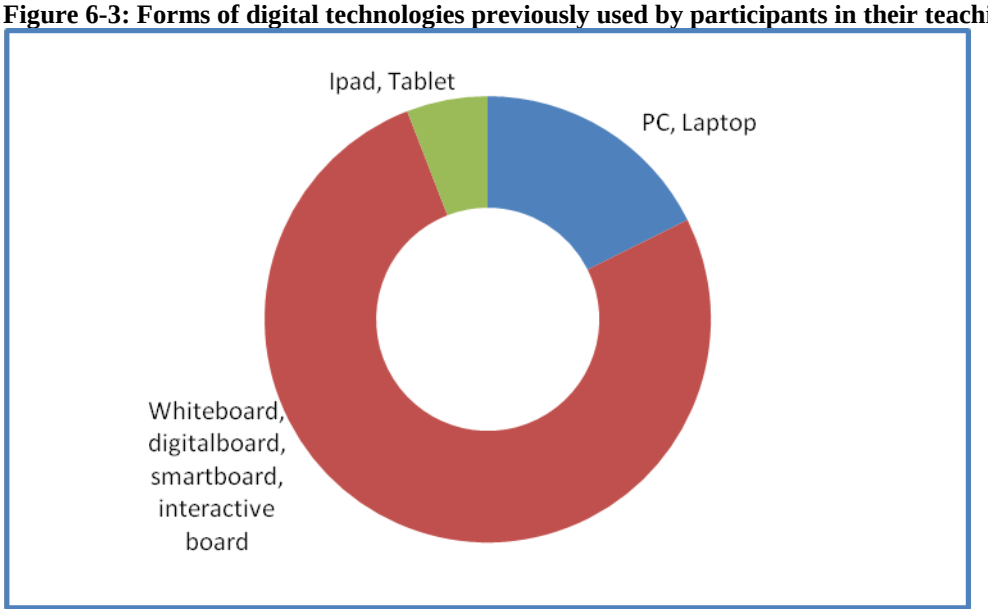
All participants indicated that they had used digital technologies before in their teaching. The proportion is shown in Figure 6-2.

Figure 6-2: Proportion of participants using digital technologies before in their teaching



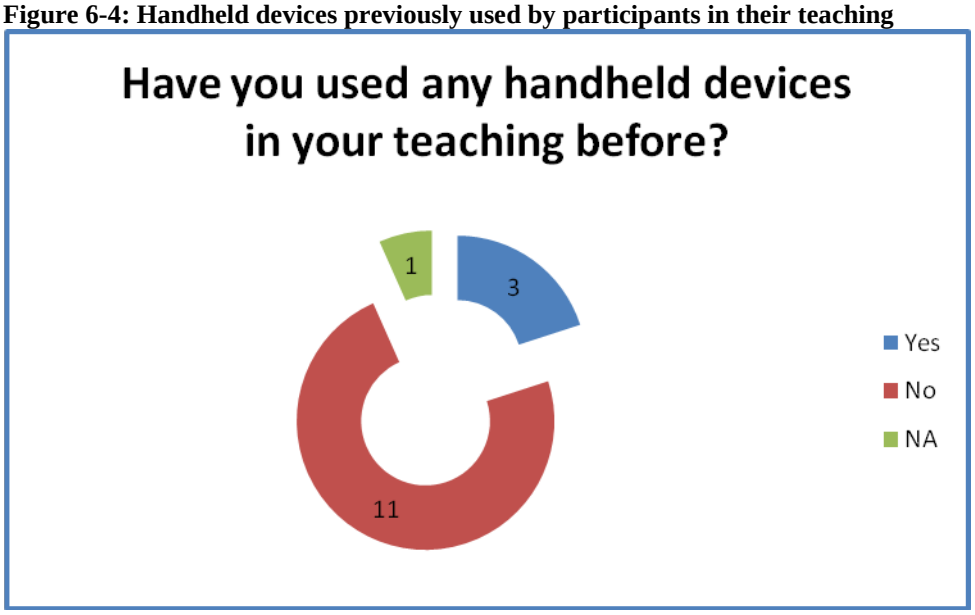
This figure shows that the majority of participants reported using digital technologies in their teaching before. Details of responses are shown in Figure 6-3.

Figure 6-3: Forms of digital technologies previously used by participants in their teaching



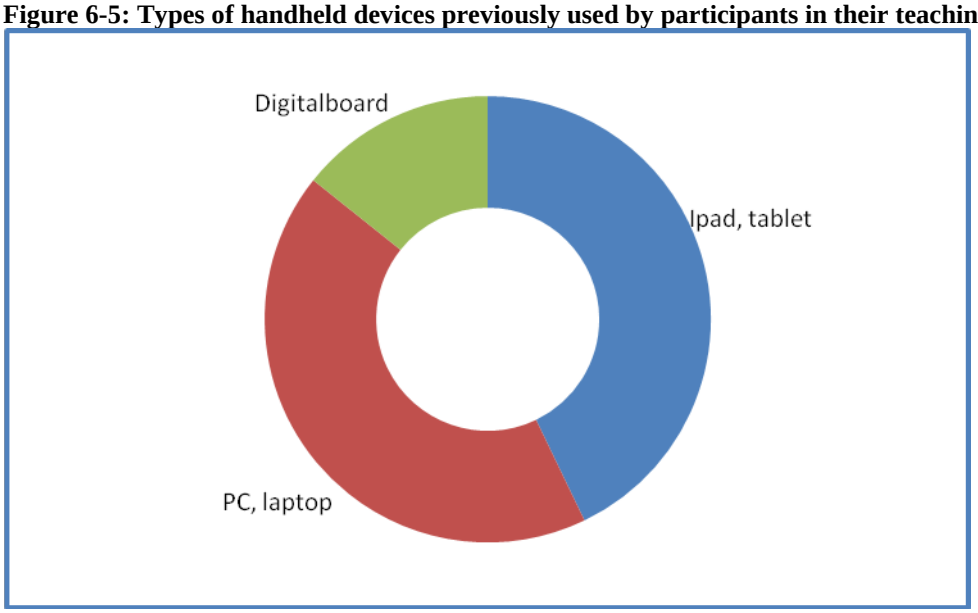
This figure shows that the majority of participants reported to use whiteboards, digital boards, smart boards or interactive whiteboards in their teaching. Most participants indicated that they had not used handheld devices in their teaching previously. The proportion is shown in Figure 6-4.

Figure 6-4: Handheld devices previously used by participants in their teaching



This figure shows that most respondents reported they had not previously used handheld devices in their teaching. The forms of handheld devices used previously are shown in Figure 6-5.

Figure 6-5: Types of handheld devices previously used by participants in their teaching

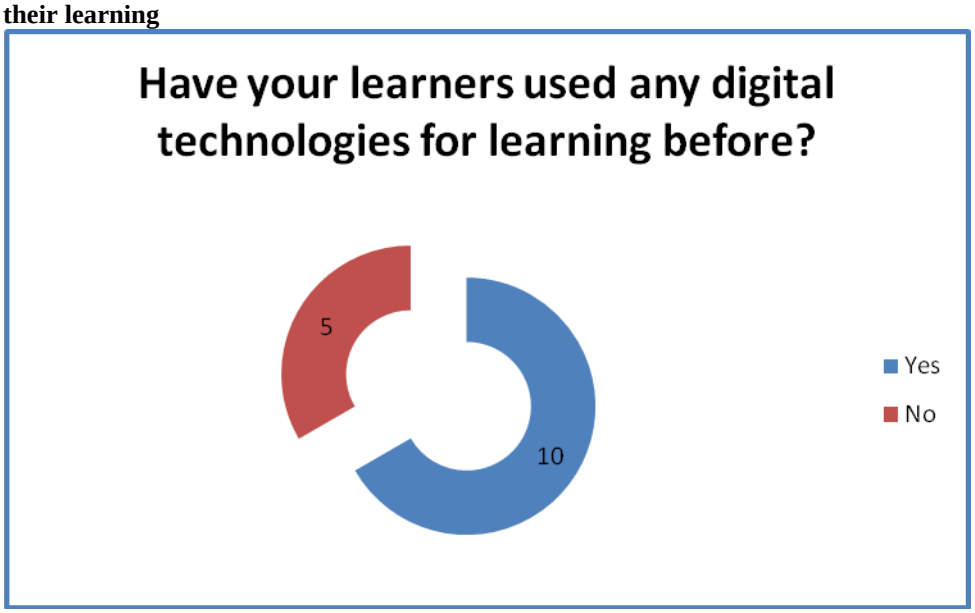


This figure shows that the respondents have previously used mostly iPads or tablets and PCs or laptops in their teaching.

Prior use of digital technologies by learners

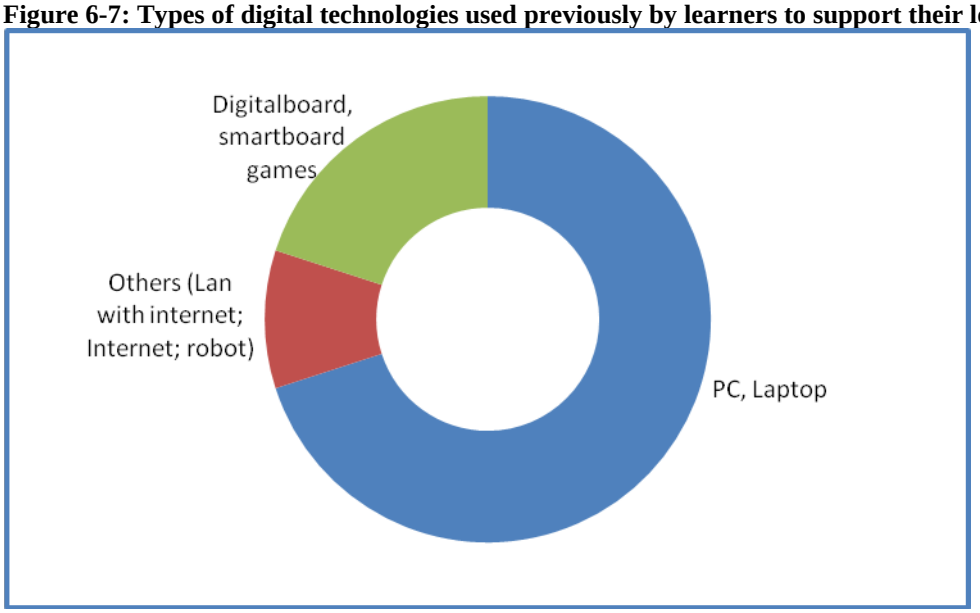
Most participants indicated that learners had used some forms of digital technologies before to support their learning. The proportion is shown in Figure 6-6.

Figure 6-6: Proportion of teachers indicating learners have previously used digital technologies to support their learning



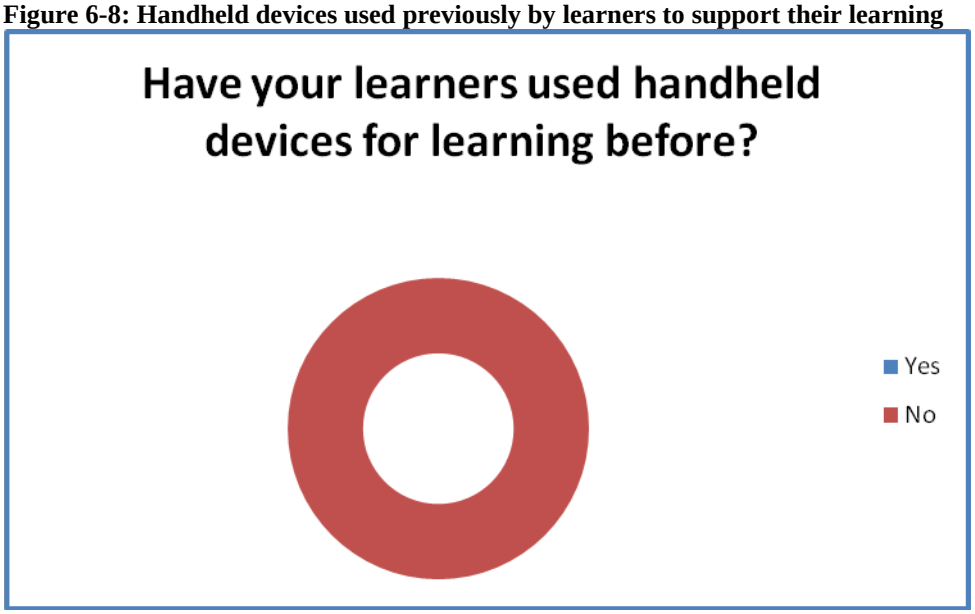
This figure shows a significant proportion of respondents indicating that their learners have previously used digital technologies to support their learning. The most common forms of digital technologies previously used have been PCs and laptops. The proportions reported are shown in Figure 6-7.

Figure 6-7: Types of digital technologies used previously by learners to support their learning



This figure shows that most respondents indicate their learners have previously used PCs and laptops. Participants reported whether learners had used handheld devices before for their learning. The proportion is shown in Figure 6-8.

Figure 6-8: Handheld devices used previously by learners to support their learning

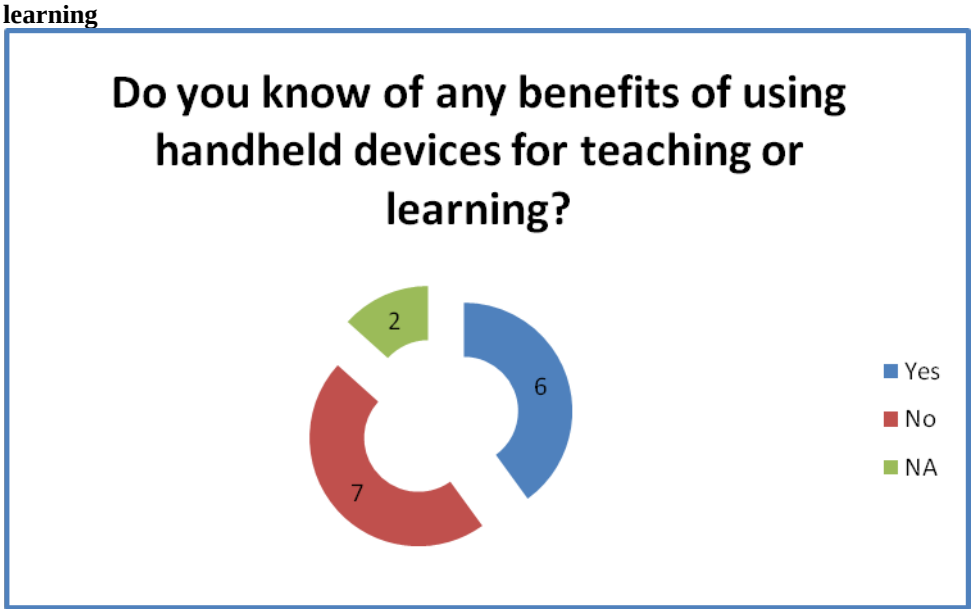


This figure shows that all respondents reported that their learners have not used handheld devices to support their learning.

Benefits and issues when using handheld devices

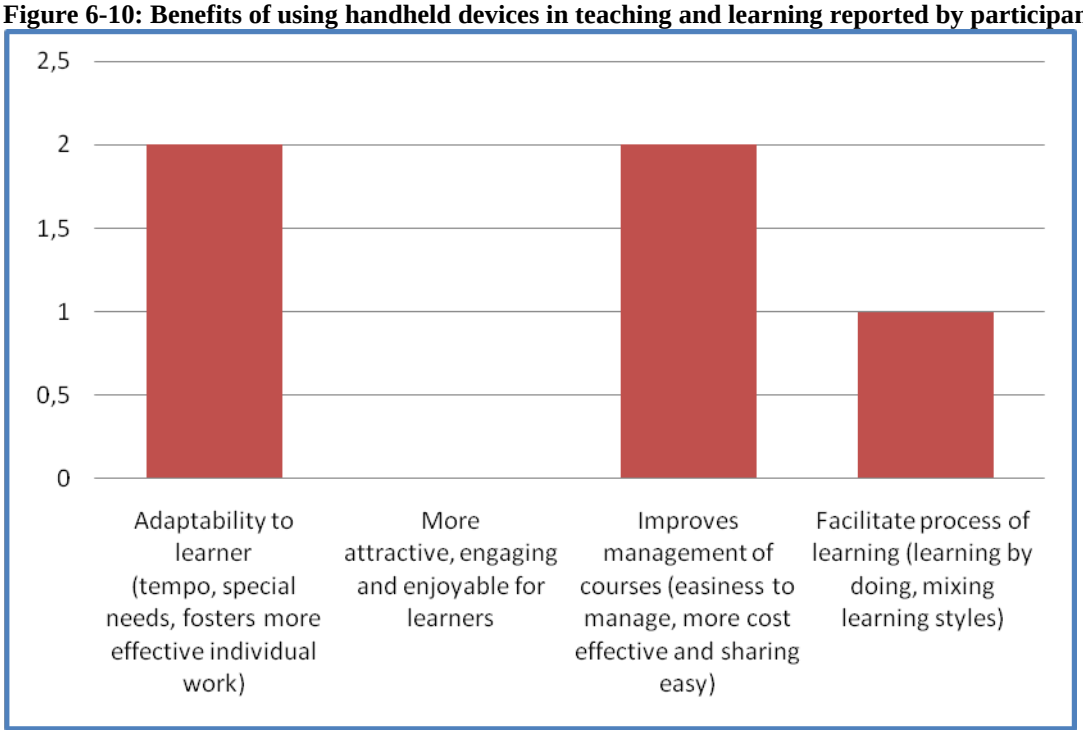
In 6 cases, participants reported that they already knew of benefits arising from using handheld devices to support learning. The proportion of responses is shown in Figure 6-9.

Figure 6-9: Proportion of participants knowing of benefits of using handheld devices in teaching and learning



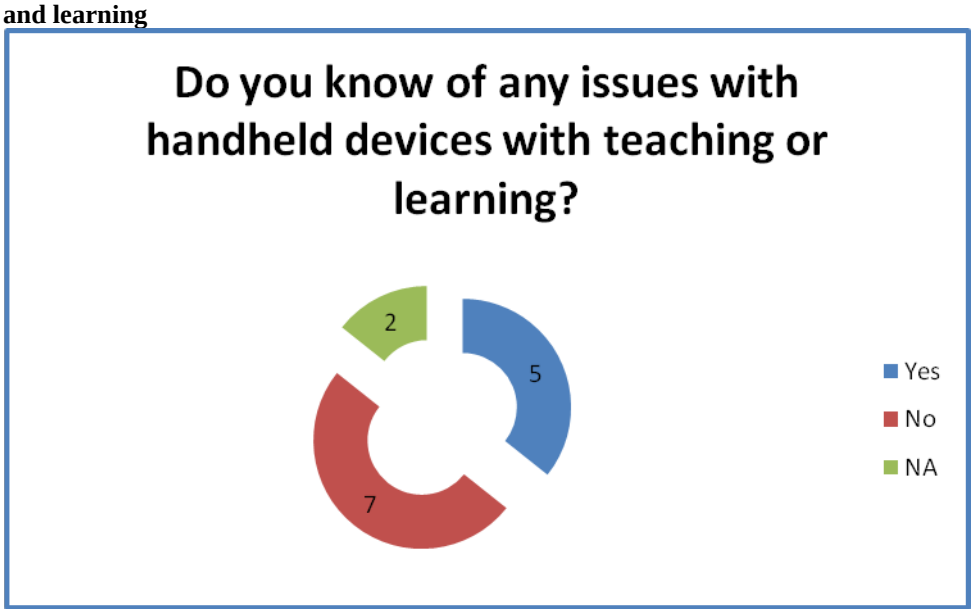
This figure indicates that most participants know of benefits of using handheld devices for teaching and learning. Participants reported four forms of benefits: adaptability to the learner; attractiveness and engagement; improving the management of courses; and facilitating the process of learning. Details of responses are shown in Figure 6-10.

Figure 6-10: Benefits of using handheld devices in teaching and learning reported by participants



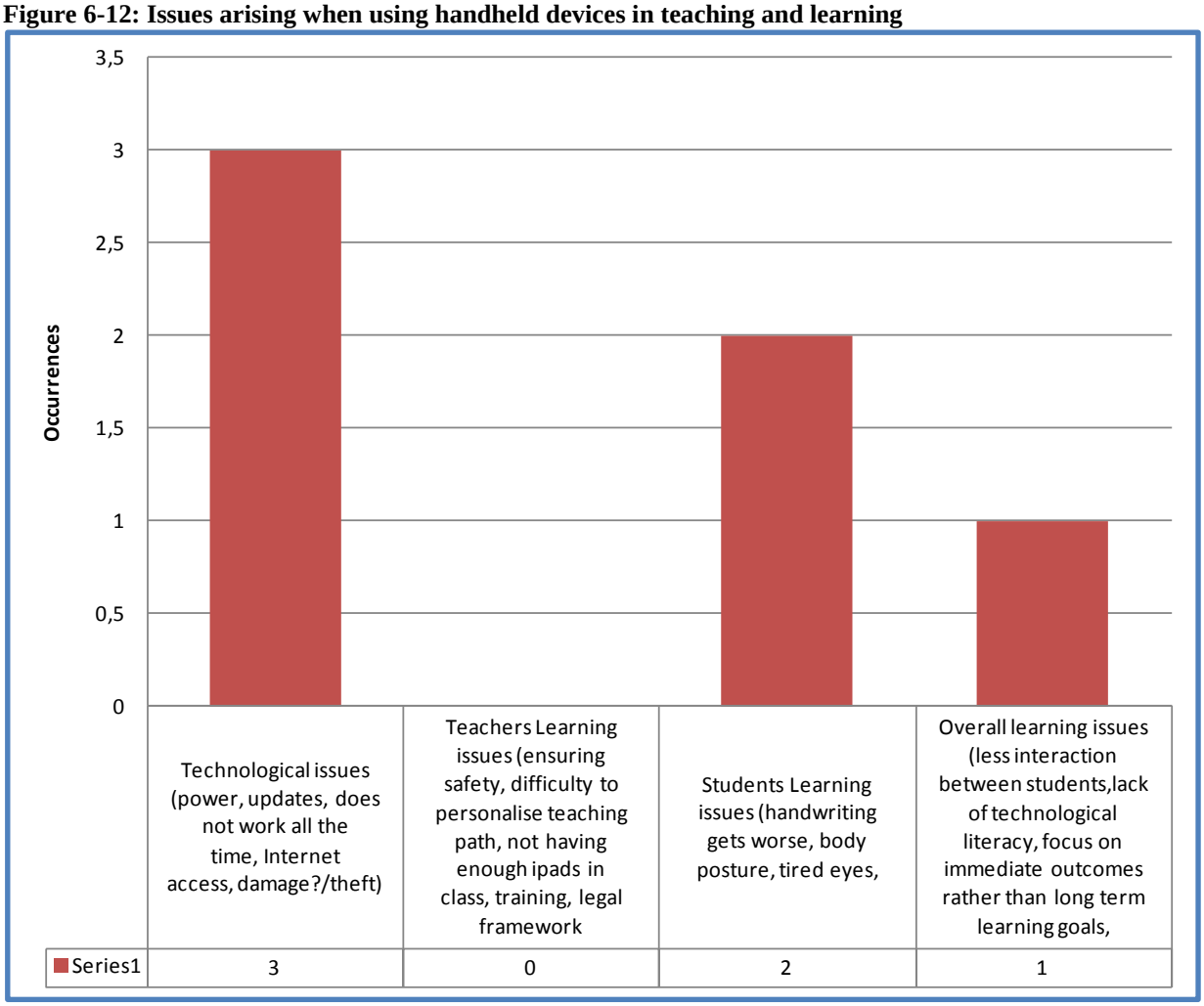
This figure shows that the benefits of using handheld devices reported the most were adaptability to the learner and improvement of the management of courses. From the total, 5 participants reported issues arising when handheld devices are used for teaching and learning. The proportion of responses is shown in Figure 6-11.

Figure 6.11: Proportion of responses indicating issues arising when using handheld devices in teaching and learning



This figure shows that the majority of respondents do not know of issues arising with handheld devices in teaching and learning. Participants reported three forms of issues arising: technological issues; teacher awareness and training issues; and learning issues. Details are shown in Figure 6-12.

Figure 6-12: Issues arising when using handheld devices in teaching and learning

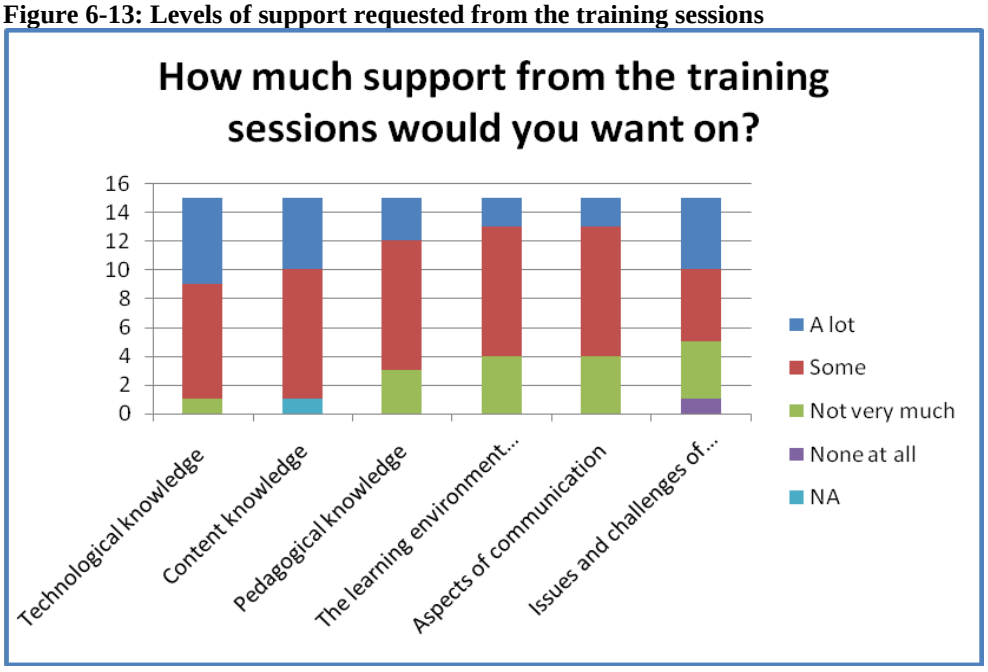


The figure above shows that the most significant issue reported arising when using handheld devices is technological.

Forms of support from the training course

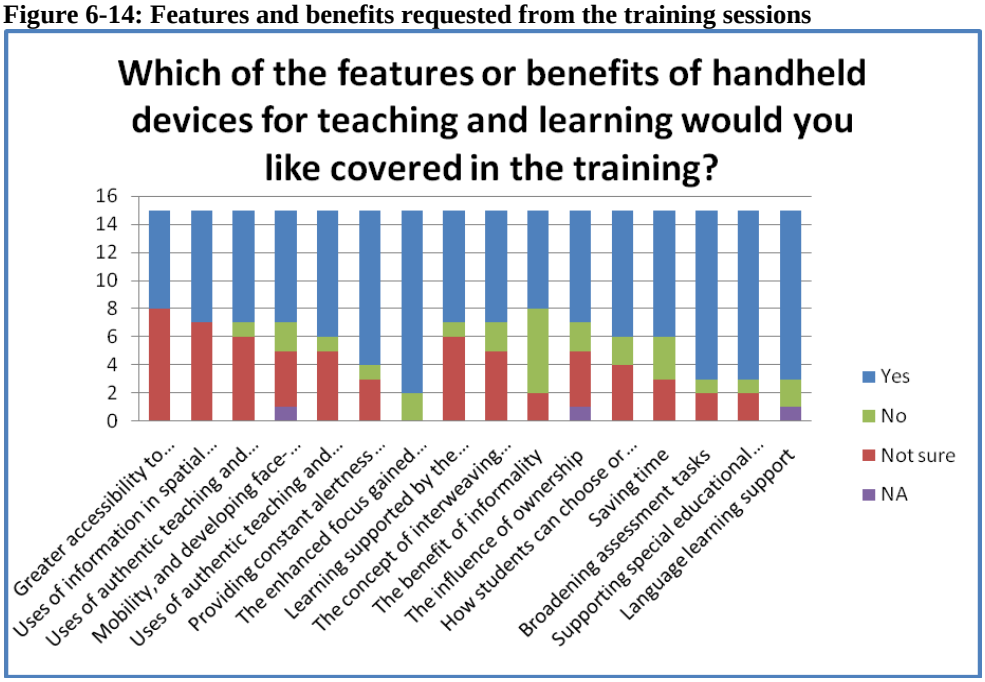
Participants indicated that the training course should provide a wide range of different forms of support. These are shown in Figure 6-13.

Figure 6-13: Levels of support requested from the training sessions



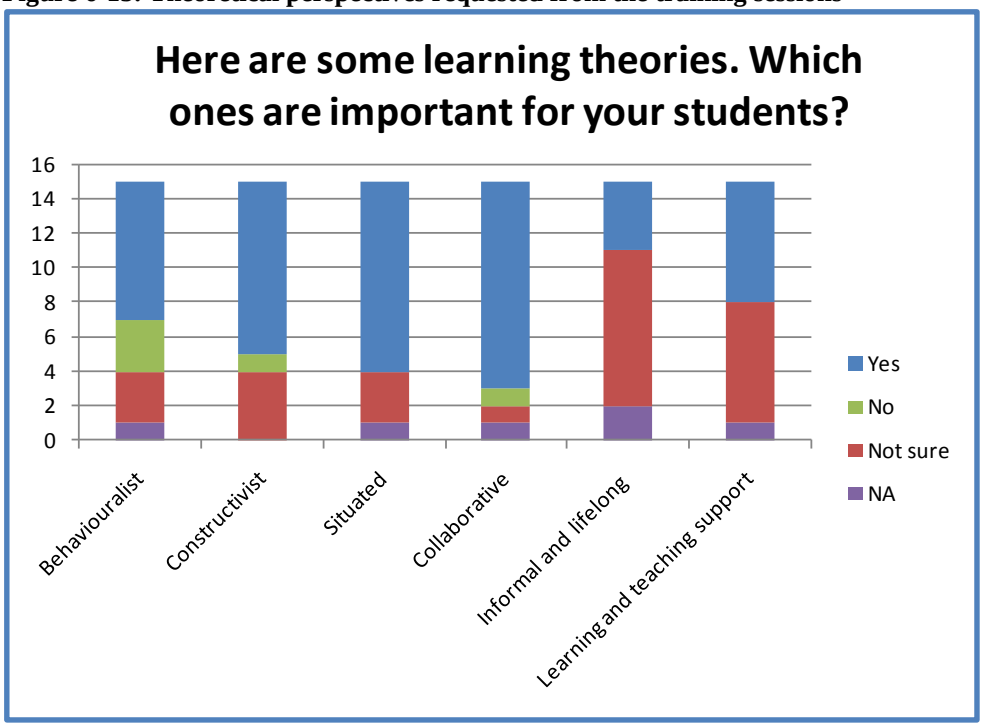
This figure shows that many responses indicate a request for support from the training sessions on technological and content knowledge. Participants also indicated that a wide range of features and benefits should be covered in the training sessions. Details are shown in Figure 6-14.

Figure 6-14: Features and benefits requested from the training sessions



This figure indicates that the features or benefits of handheld devices requested the most are the enhanced focus gained from mobile learning moments, broadening assessment tasks, supporting special educational needs and language learning support. In terms of theoretical background, participants indicated different levels of need in this respect. Details of responses are shown in Figure 6-15.

Figure 6-15: Theoretical perspectives requested from the training sessions

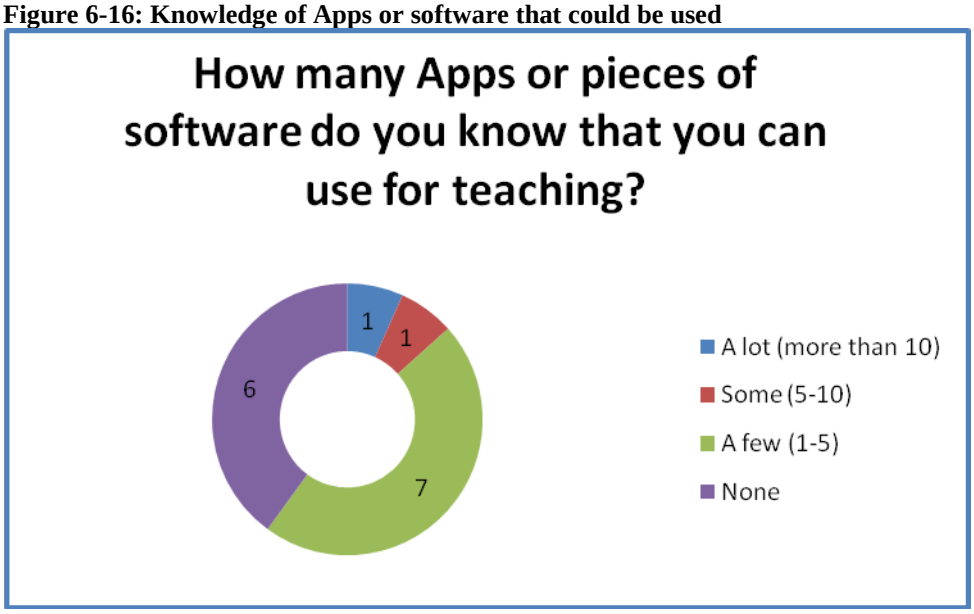


The figure shows a significant proportion of preference for situated and collaborative learning approaches within theoretical perspectives requested from the training sessions.

Software resources and activities

Some participants indicated that they were aware of some software resources that could be used in teaching and learning. Their responses are shown in Figure 6-16.

Figure 6-16: Knowledge of Apps or software that could be used



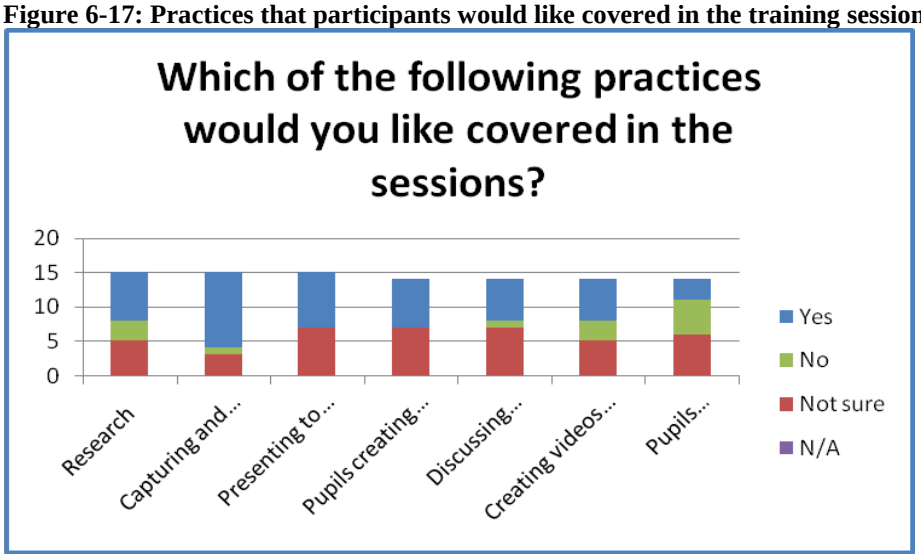
The figure above shows that most participants have knowledge of “a few” Apps or software that could be used in their teaching. Those participants who know of Apps or software indicated details of these, and why they use them. These are listed in Table 6-2.

App or piece of software	Why you use it
Beter rekenen	Math
Natural Sciences Software	Some experiments are dangerous in the real lab or impossible with the provided infrastructure
tiptool	don't
toptool	short games while learning

Table 6-2: Apps or software that are used by teachers already

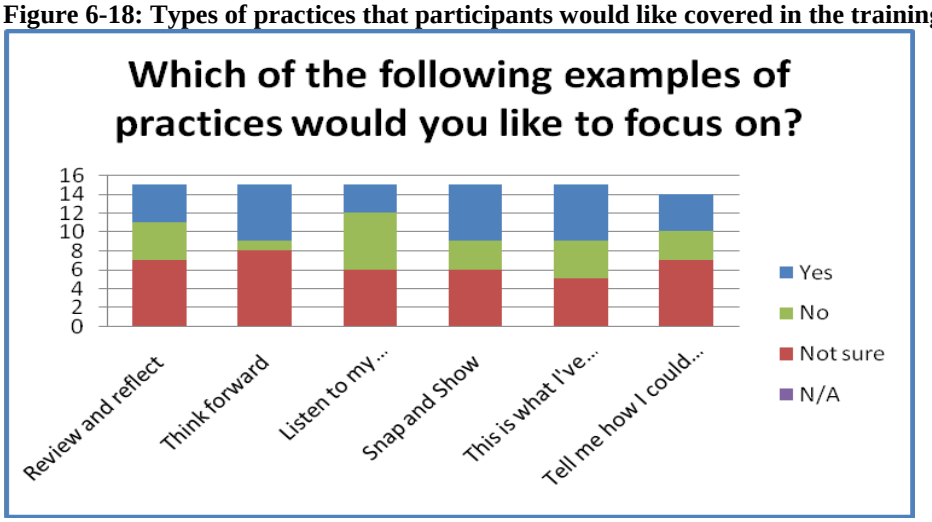
Participants indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 6-17.

Figure 6-17: Practices that participants would like covered in the training sessions



The practices that most of the participants would like to be covered in the training sessions are capturing and using imagery and video, and presenting to teachers and peers. Participants also indicated examples of practices that they would like covered. Their responses are shown in Figure 6-18.

Figure 6-18: Types of practices that participants would like covered in the training sessions

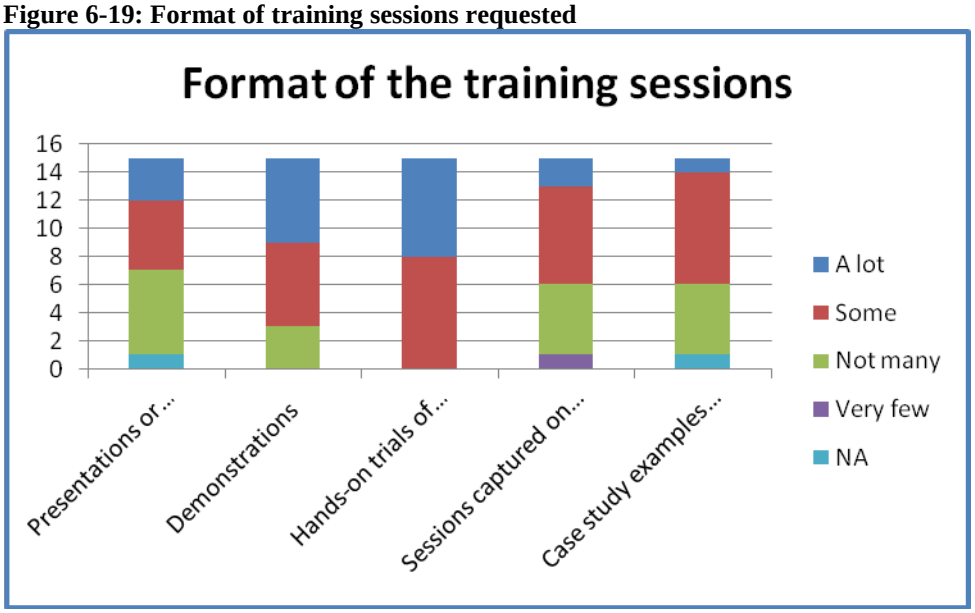


The types of practices that participants would like covered in the training sessions the most are “think forward” and “snap and show”.

Format of training sessions

Participants indicated the format of training sessions that they would like. Their responses are shown in Figure 6-19.

Figure 6-19: Format of training sessions requested



The figure shows that most participants would welcome demonstrations and hands-on trials of practice as their favourite formats for training sessions.

7. THE UNITED KINGDOM (ENGLAND) IN CONTEXT

Total responses

The total number of responses from teachers, trainers and partners in the UK (England) was 2 (see Table 7-1). The findings from this low number should be viewed with caution; outcomes might not indicate the needs of all teachers involved in this cohort.

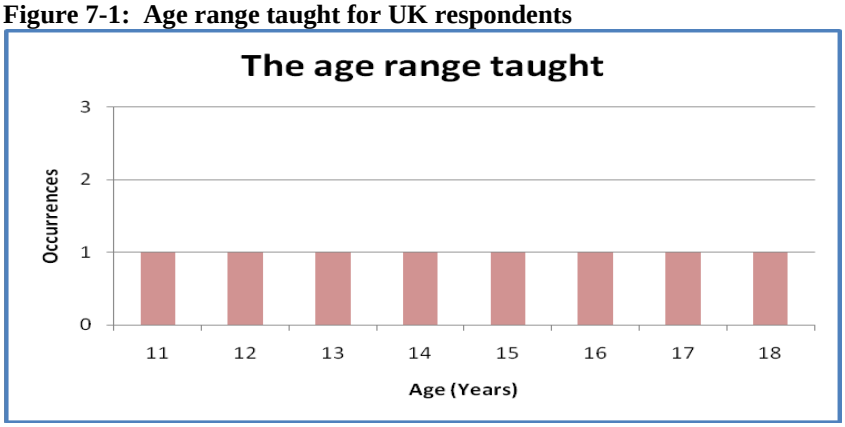
Country	Total Number of responses
UK (England)	1 teacher
	1 trainer

Table 7-1: Responses by country and target group

The age range taught

The age range taught spans from 11 to 18 years. The range is detailed in Figure 7-1.

Figure 7-1: Age range taught for UK respondents

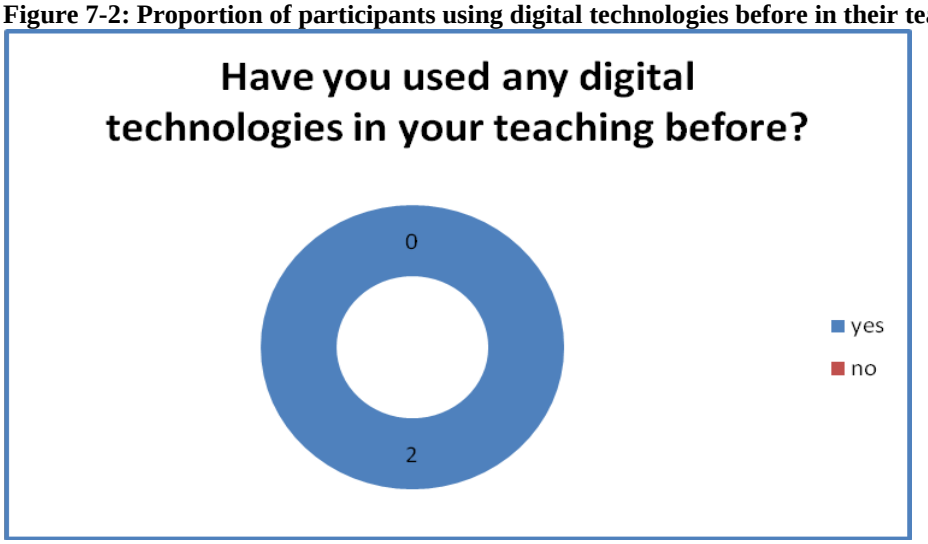


The teacher reported that the class included learners with special educational needs, with learners with communication needs, and was supported with special support teachers.

Prior use of digital technologies in teaching

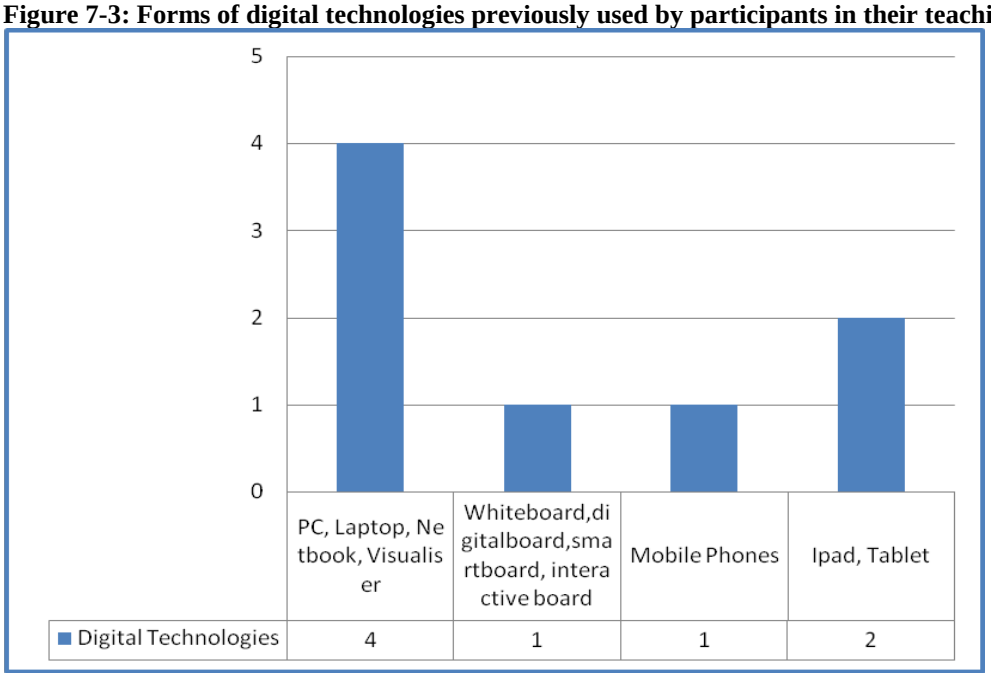
All participants indicated that they had used digital technologies before in their teaching. The proportion is shown in Figure 7-2.

Figure 7-2: Proportion of participants using digital technologies before in their teaching



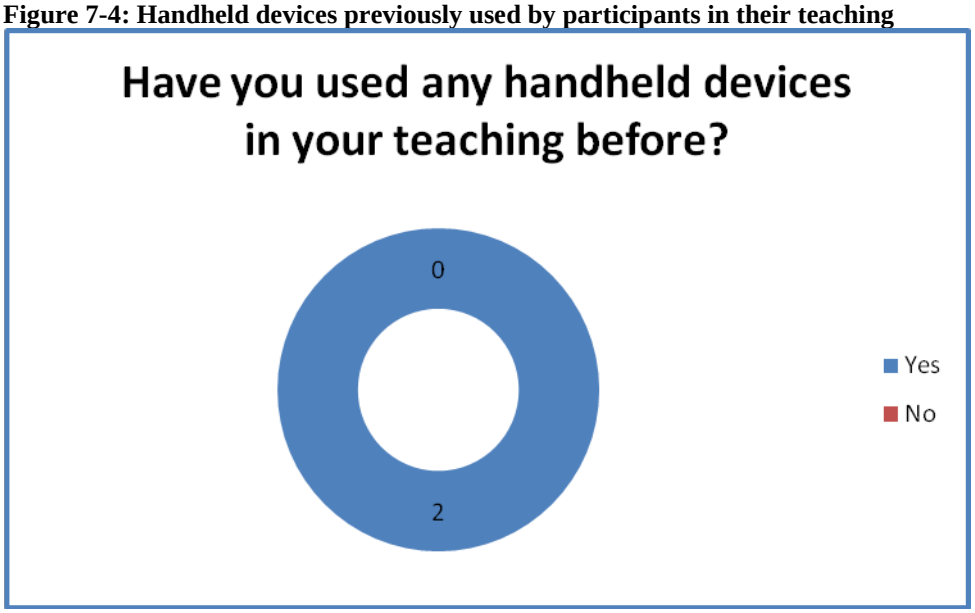
This figure shows that the majority of the participants reported using digital technologies in their teaching before. Most prior use has been with interactive whiteboards. Details of responses are shown in Figure 7-3.

Figure 7-3: Forms of digital technologies previously used by participants in their teaching



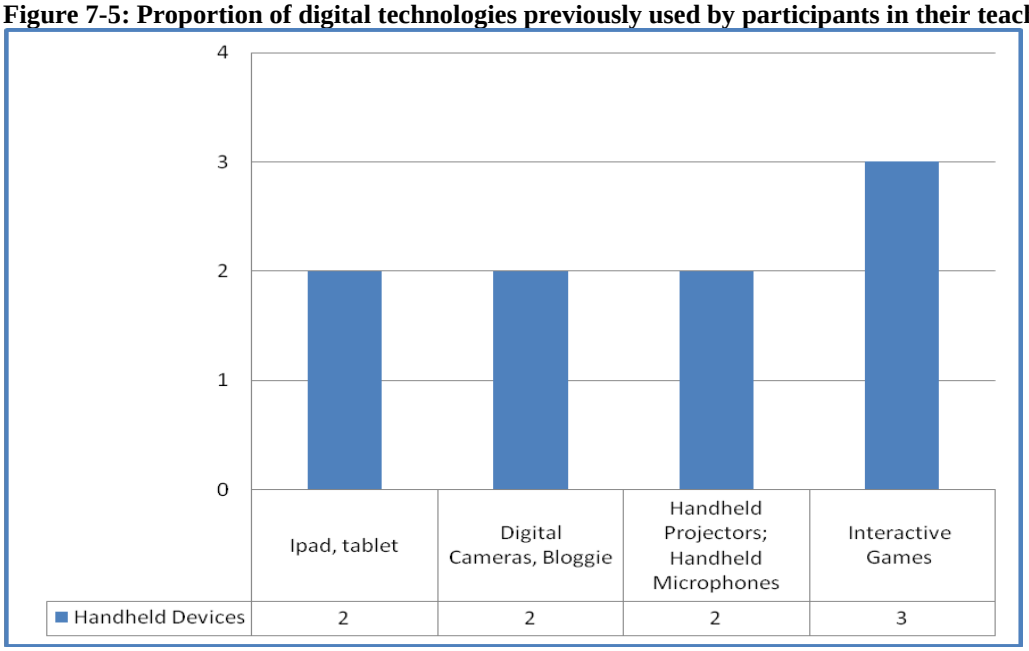
This figure shows that participants reported using PCs, laptops, netbooks, visualizers, iPads and tablets previously in their teaching. Participants indicated that they had used handheld devices in their teaching previously. The proportion is shown in Figure 7-4.

Figure 7-4: Handheld devices previously used by participants in their teaching



This figure shows that all respondents reported to have previously used handheld devices in their teaching. Respondents were asked about the forms of handheld devices they had used previously. These are shown in Figure 7-5.

Figure 7-5: Proportion of digital technologies previously used by participants in their teaching

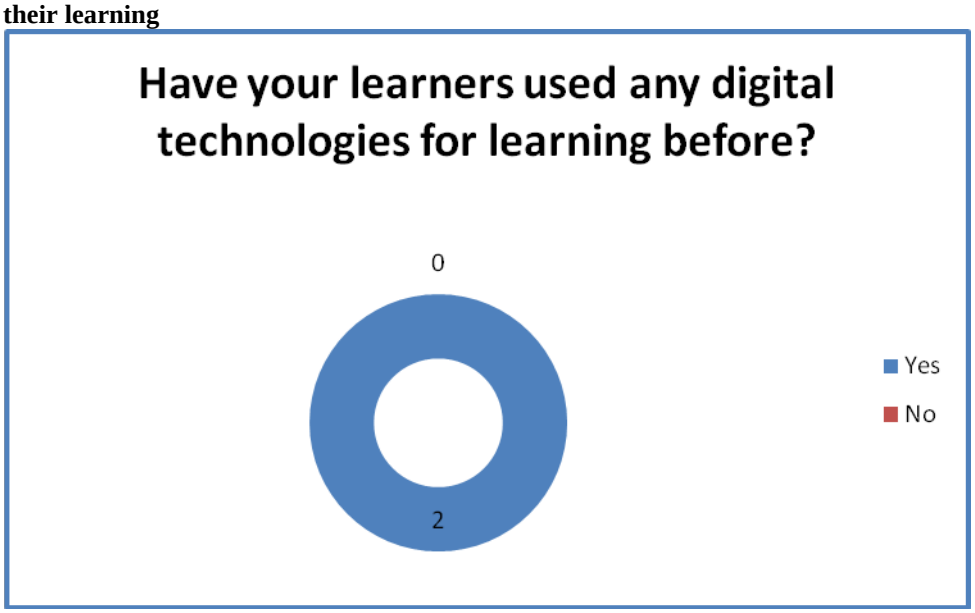


This figure shows that most of the respondents have previously used interactive games, and peripherals such as digital cameras, handheld projectors and microphones, in their teaching previously.

Prior use of digital technologies by learners

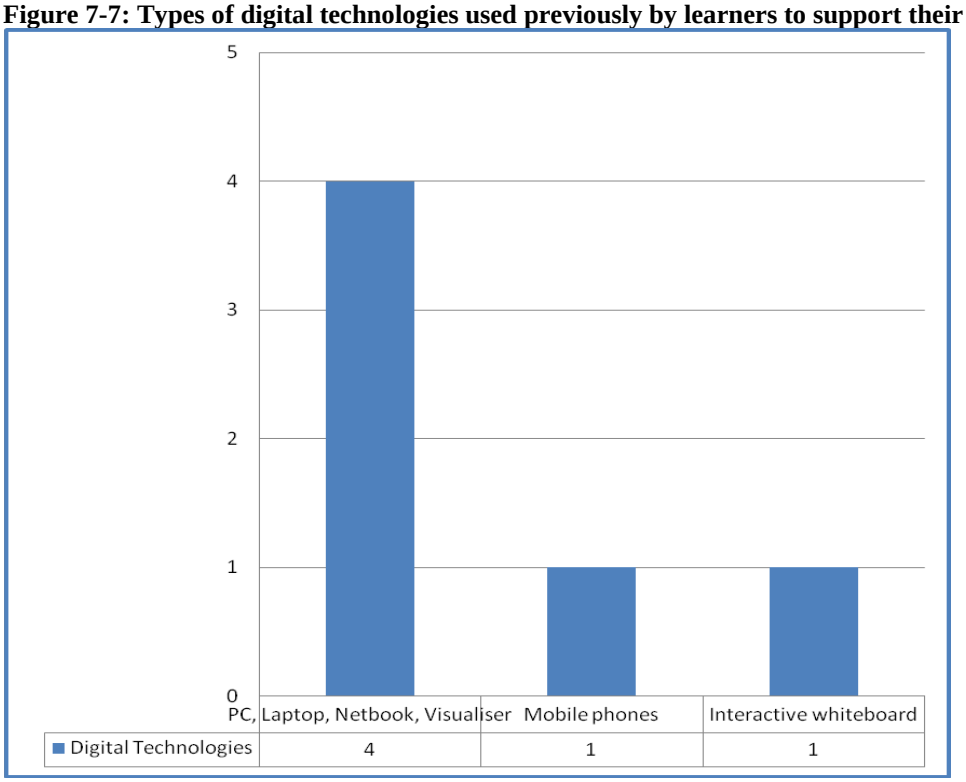
All participants indicated that learners had used some forms of digital technologies before to support their learning. The proportion is shown in Figure 7-6.

Figure 7-6: Proportion of teachers indicating learners have previously used digital technologies to support their learning



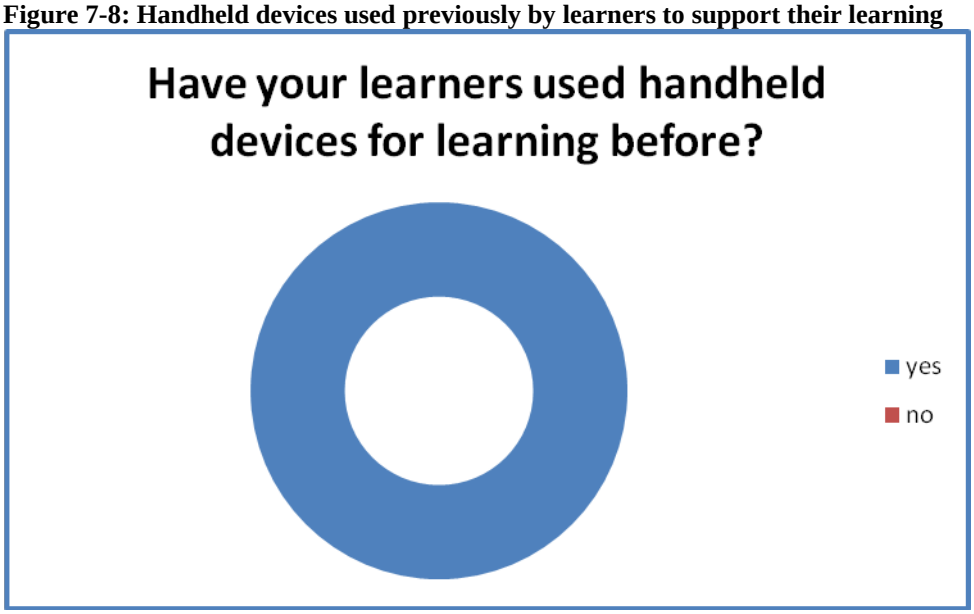
All respondents reported that their learners have previously used digital technologies to support their learning. The proportions reported are shown in Figure 7-7.

Figure 7-7: Types of digital technologies used previously by learners to support their learning



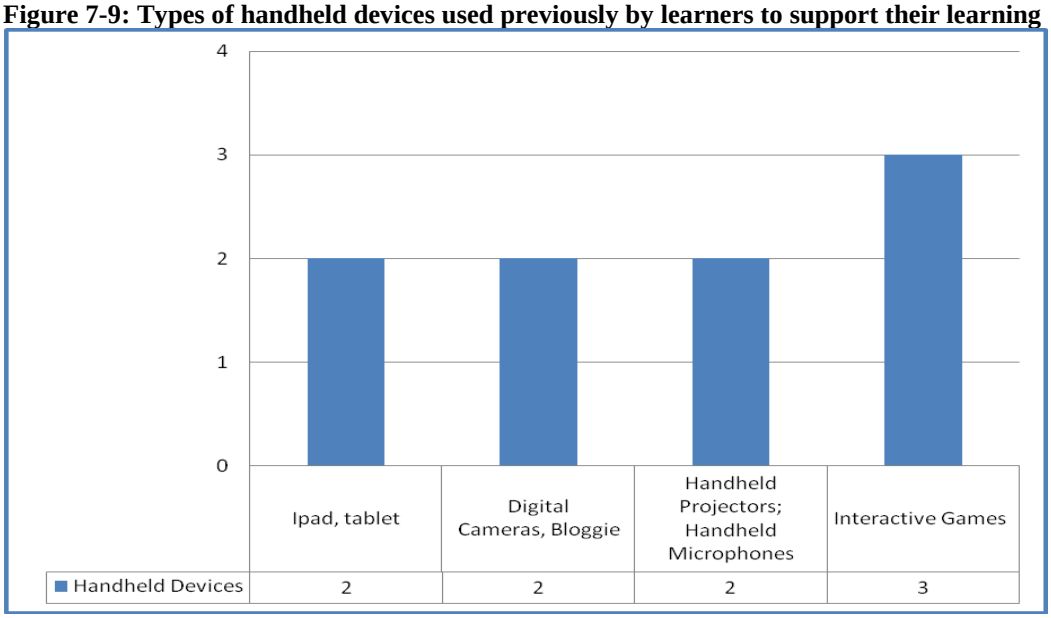
This figure shows that most respondents indicate their learners have previously used PCs, laptops, netbooks and visualizers to support their learning previously. In both cases learners have used handheld devices before to support their learning. The proportion is shown in Figure 7-8.

Figure 7-8: Handheld devices used previously by learners to support their learning



This figure shows that all respondents reported that their learners have used handheld devices to support their learning. Details of responses are shown in Figure 7-9.

Figure 7-9: Types of handheld devices used previously by learners to support their learning

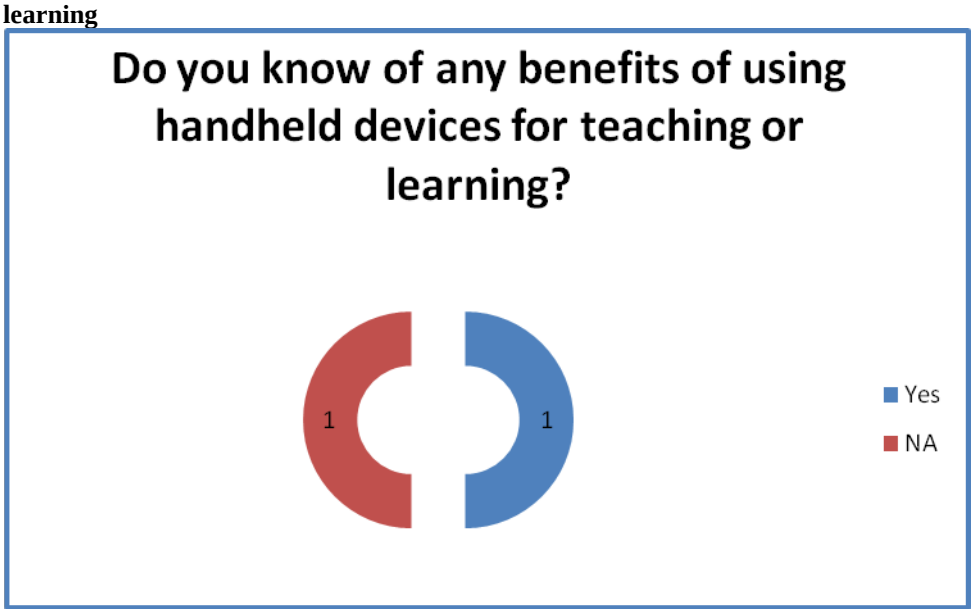


This figure shows that respondents reported their learners have used interactive games and a range of handheld peripherals and devices, including projectors and microphone, iPads and tablets to support their learning previously.

Benefits and issues when using handheld devices

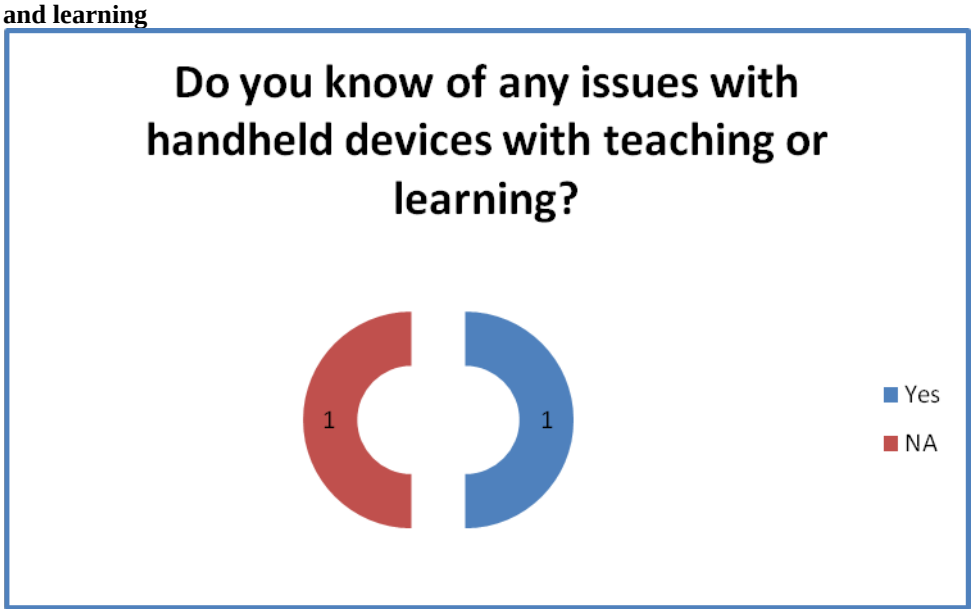
Participants reported that they already know of benefits arising from using handheld devices to support teaching and learning. The proportion of responses is shown in Figure 7-10.

Figure 7-10: Proportion of participants knowing of benefits of using handheld devices in teaching and learning



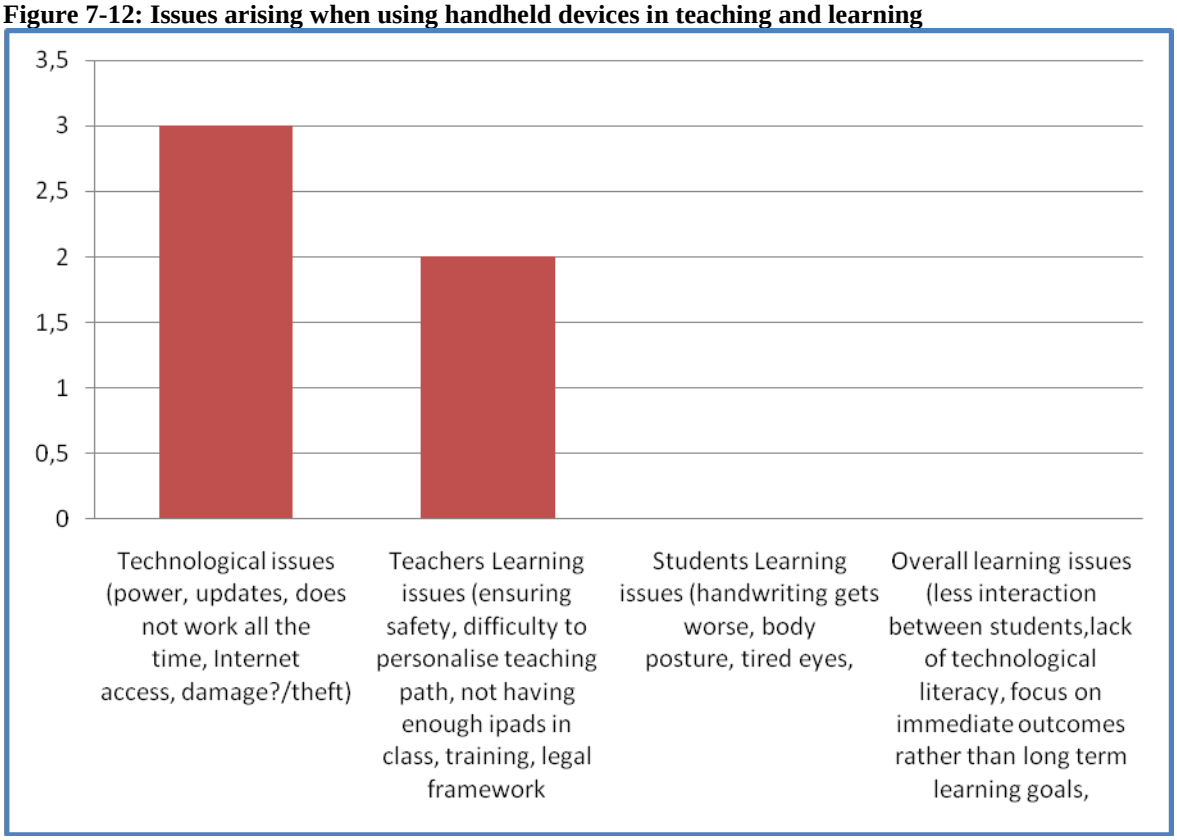
This figure indicates that one of the participants knows of benefits of using handheld devices for teaching and learning. Participants reported four forms of benefits: adaptability to the learner; attractiveness and engagement; improving the management of courses; and facilitating the process of learning. In the UK case, only one respondent reported a benefit in terms of improvement in engagement in texts. Participants also reported issues arising when handheld devices are used for teaching and learning. The proportion of responses is shown in Figure 7-11.

Figure 7-11: Proportion of responses indicating issues arising when using handheld devices in teaching and learning



This figure shows that one of the respondents knows of issues arising when handheld devices are used in teaching and learning. Participants reported three forms of issues arising: technological issues; teacher awareness and training issues; and learning issues. Details are shown in Figure 7-12.

Figure 7-12: Issues arising when using handheld devices in teaching and learning

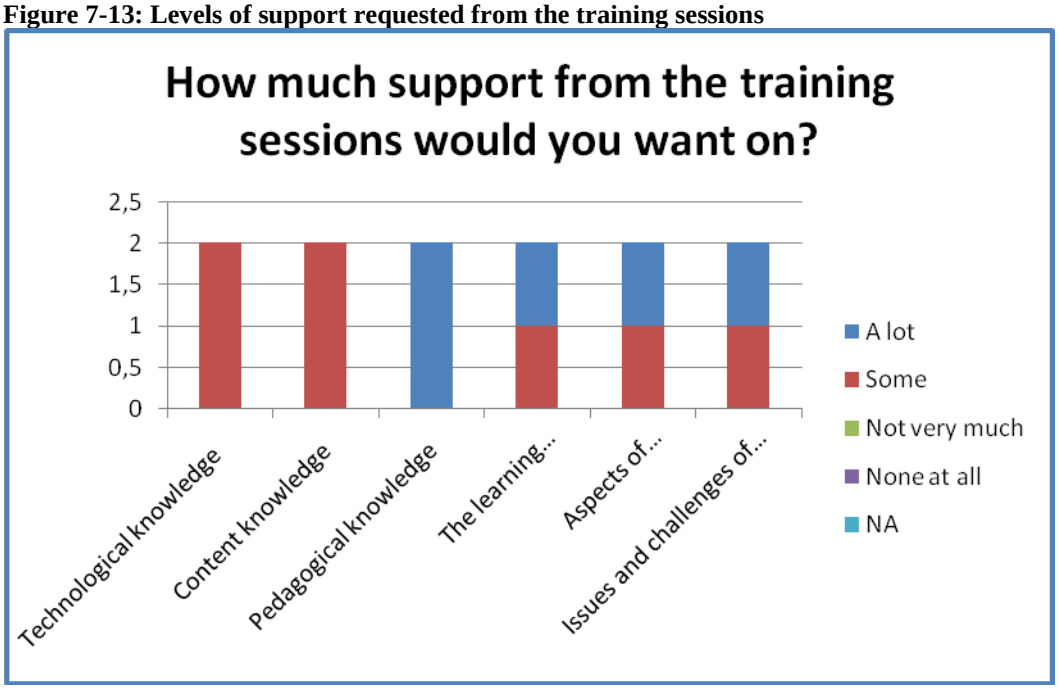


The figure above shows that the most significant issue arising when using handheld devices is technological.

Forms of support from the training course

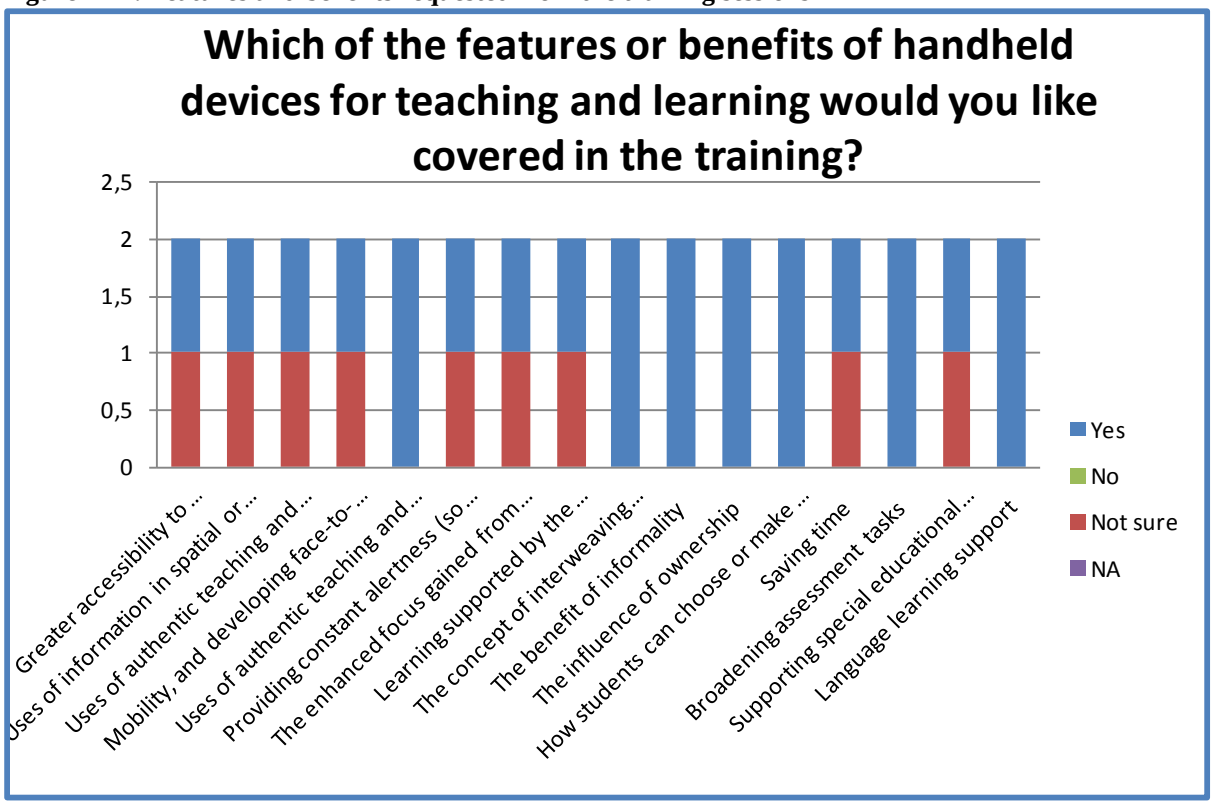
Participants indicated that the training course should provide a wide range of different forms of support. These are shown in Figure 7-13.

Figure 7-13: Levels of support requested from the training sessions



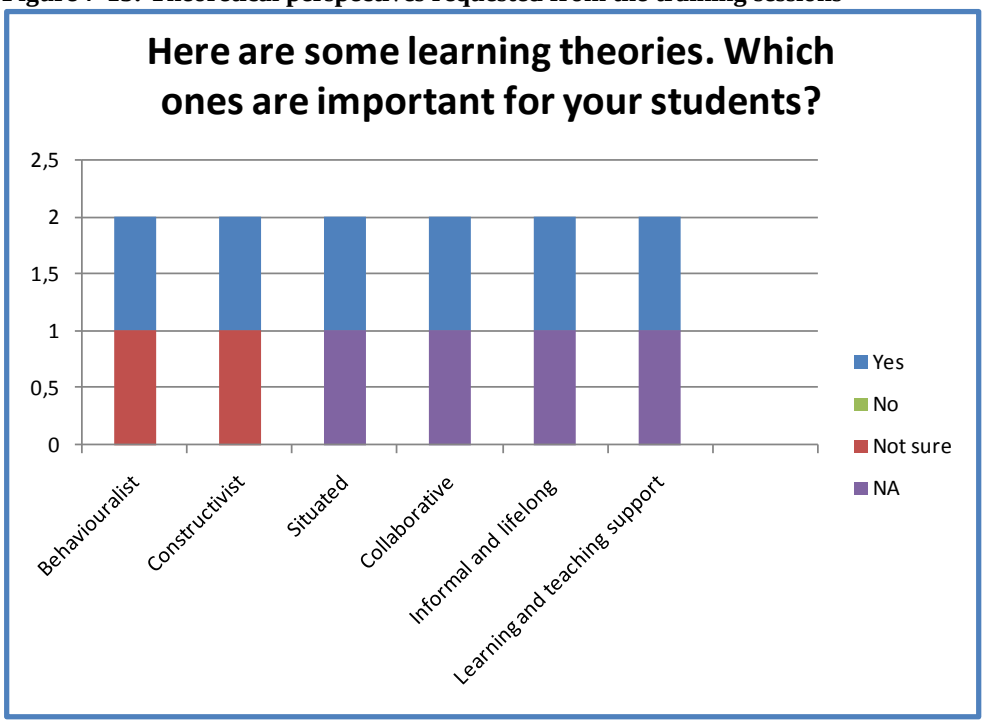
This figure shows that a significant proportion of responses indicate a request for support from the training session on pedagogical knowledge. Participants also indicated that a wide range of features and benefits should be covered in the training sessions. Details are shown in Figure 7-14.

Figure 7-14: Features and benefits requested from the training sessions



This figure indicates that the features or benefits of handheld devices requested the most are: the use of authentic teaching and learning materials; the concept of interweaving learning interactions; the benefit of informality; the influence of ownership; how students can choose or make preferences; the broadening of assessment tasks; and language learning support. In terms of theoretical background, participants indicated different levels of need in this respect. Details of responses are shown in Figure 7-15.

Figure 7-15: Theoretical perspectives requested from the training sessions

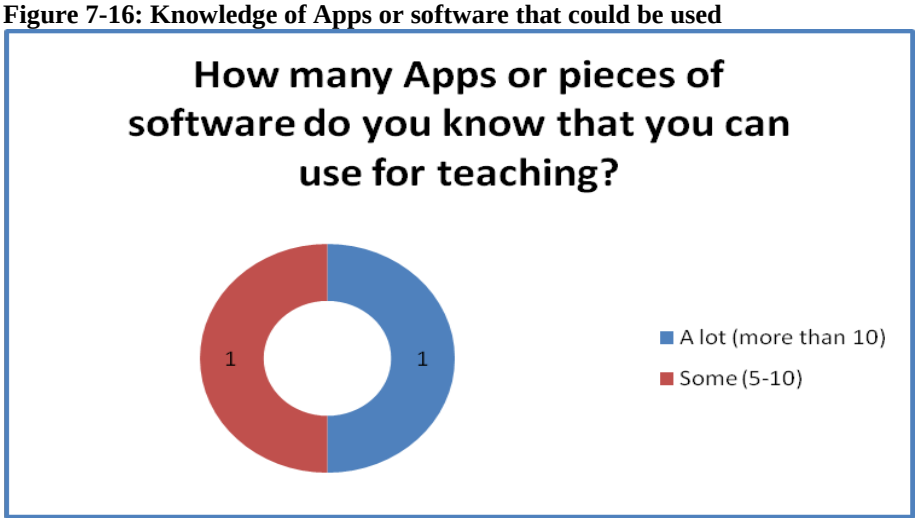


The figure shows an equal preference for the various learning approaches from a theoretical perspective requested from the training sessions.

Software resources and activities

Some participants indicated that they were aware of some software resources that could be used in teaching and learning. Their responses are shown in Figure 7-16.

Figure 7-16: Knowledge of Apps or software that could be used



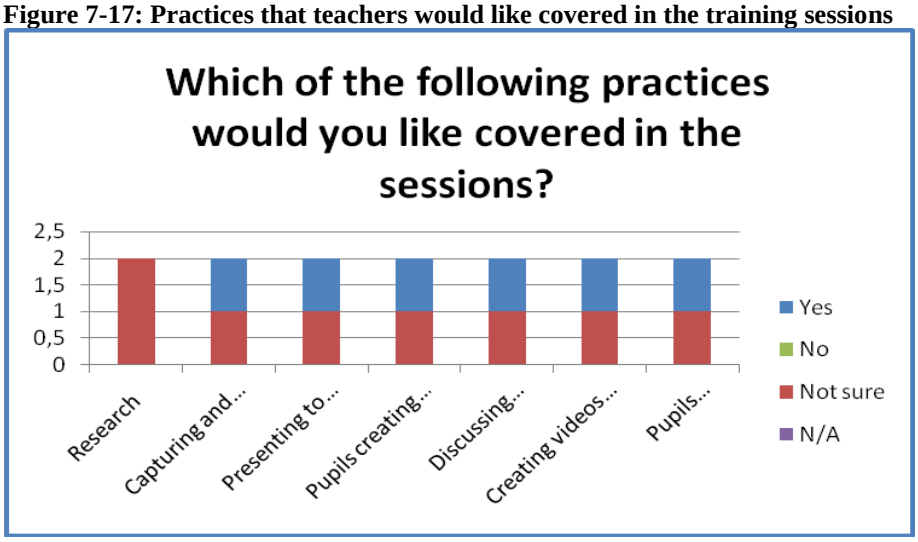
The figure above shows that one of the participants has knowledge of "a lot" of Apps or software that could be used in their teaching. Those participants who know of Apps or software indicated details of these, and why they use them. These are listed in Table 7-2.

App or piece of software	Why you use it
Book Creator	Different, interactive approach to summative assessment
Nearpod	Videos and resources - but these are limited and not v useful for my subject at the moment
Quipper	Revision questions on various topics - good plenary or revision tool

Table 7-2: Apps or software that are used by teachers already

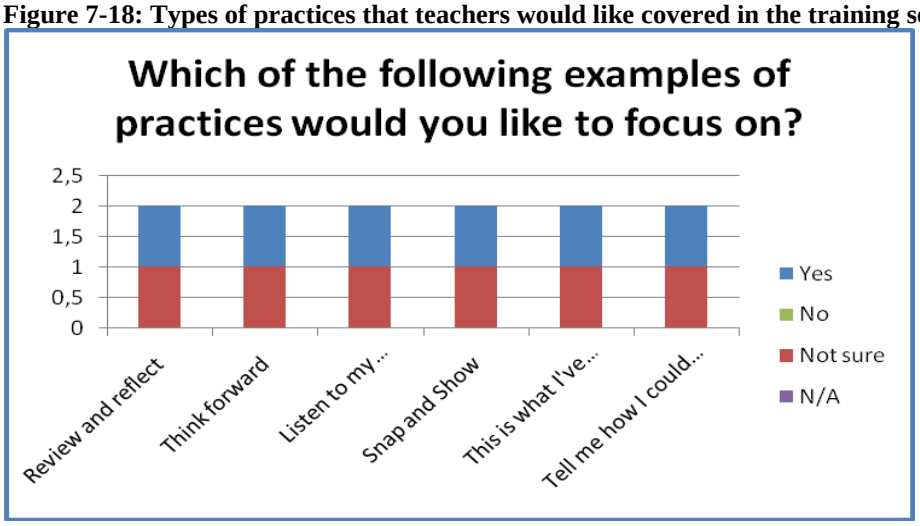
Participants indicated the sorts of practices they would like covered in the sessions. Their responses are shown in Figure 7-17.

Figure 7-17: Practices that teachers would like covered in the training sessions



This figure shows that there is an equal preference for the practices that participants would like to be covered in the training sessions, except in the case of "Research" where participants reported they were unsure. Participants also indicated examples of practices that they would like covered. Their responses are shown in Figure 7-18.

Figure 7-18: Types of practices that teachers would like covered in the training sessions

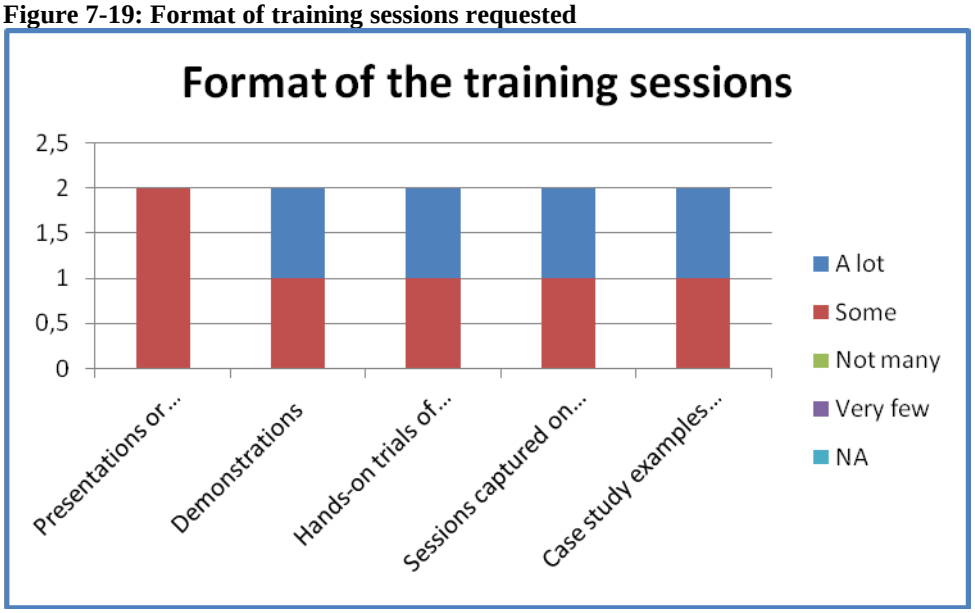


This figure shows that there is an equal preference for the type of practices that participants would like covered in the training sessions.

Format of training sessions

Participants indicated the format of training sessions that they would like. Their responses are shown in Figure 7-19.

Figure 7-19: Format of training sessions requested



The figure shows that most participants would welcome demonstrations, hands-on trials of practice as well as sessions captured on video for reviewing afterwards and case study examples, as their favourite formats for training sessions.

8. IMPLICATIONS FOR THE DESIGN OF THE MLEARN TRAINING

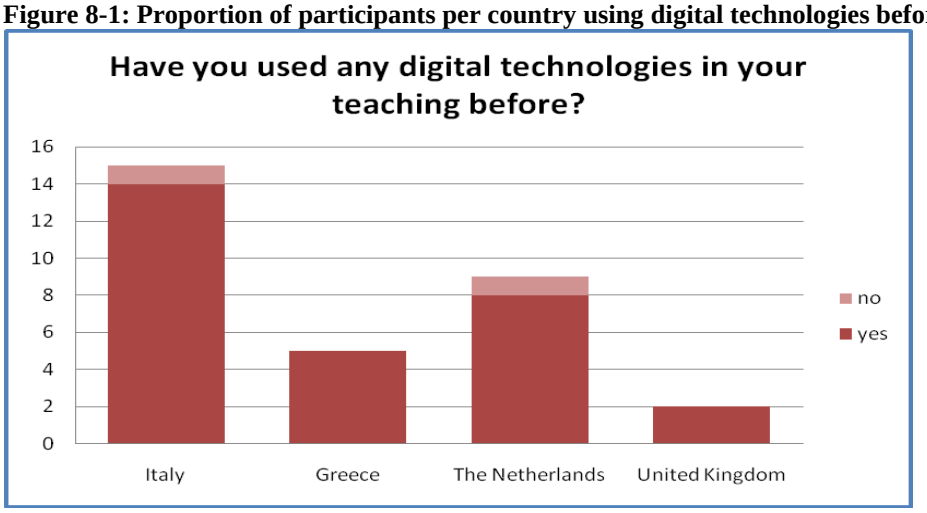
Comparisons between countries

In this section, comparisons between countries are considered. These comparisons highlight some implications for the training sessions being run in individual countries. Initially, graphics will be used to highlight comparisons. These are then drawn together into comparative statements within a table, and these elements are used to consider implications for the design of the MLARN training programme.

Prior use of digital technologies in teaching

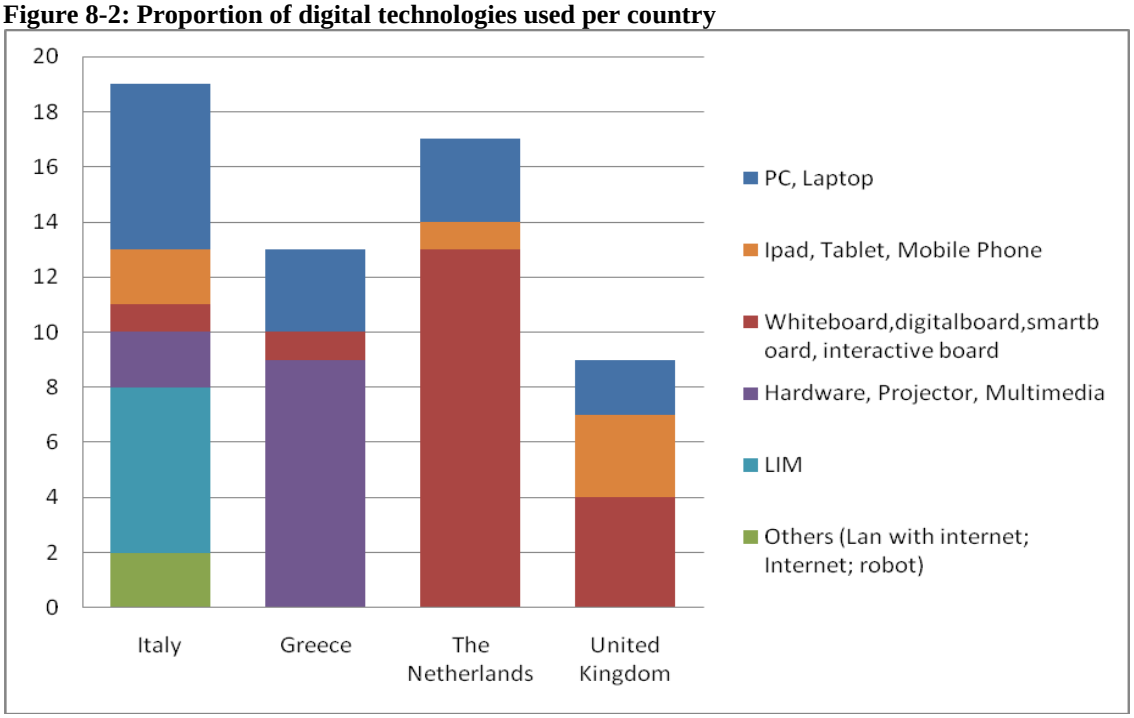
Figure 8-1 indicates the proportion of participants that have previously used digital technologies in their teaching.

Figure 8-1: Proportion of participants per country using digital technologies before in their teaching



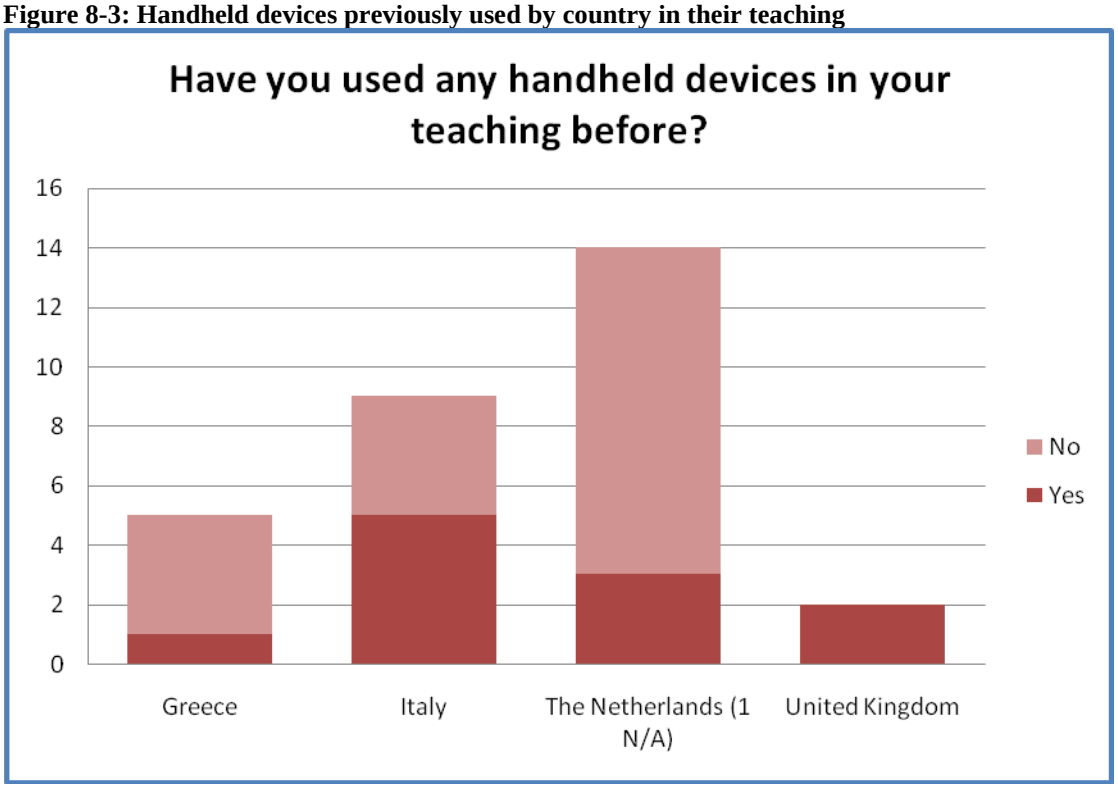
This figure shows that most participants across all countries have used digital technologies in teaching before. Figure 8-2 shows the types of digital technologies used.

Figure 8-2: Proportion of digital technologies used per country



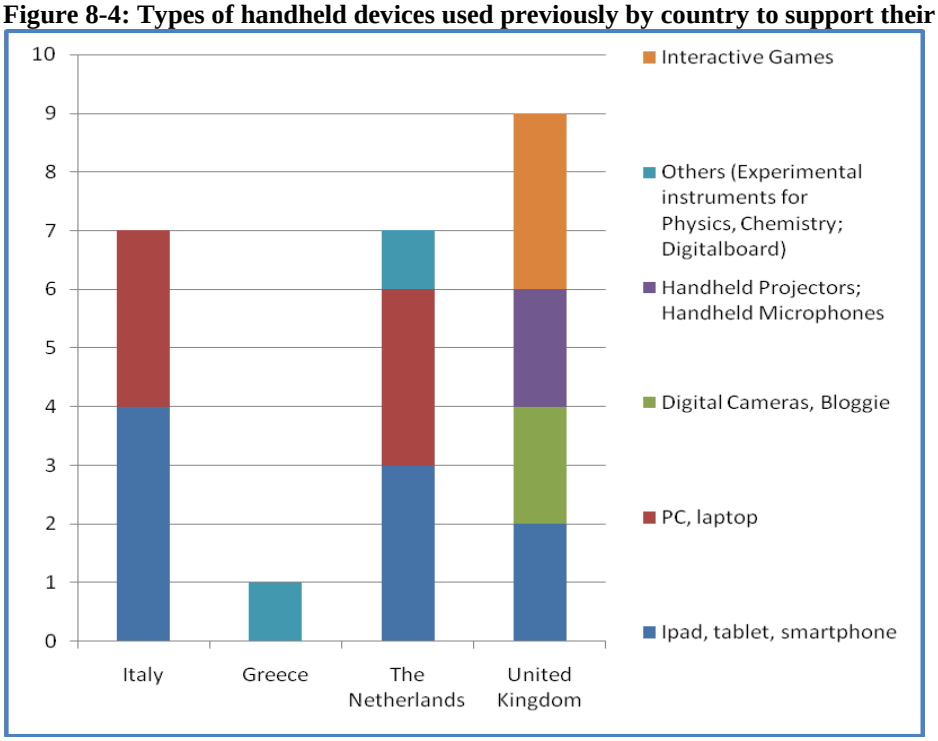
This figure shows that participants in the Netherlands and England have used interactive whiteboards more, that those in Greece have used projectors and multimedia more, and that those in Italy have used LIM, PCs and laptops more. Figure 8-3 shows previous use of handheld devices by country.

Figure 8-3: Handheld devices previously used by country in their teaching



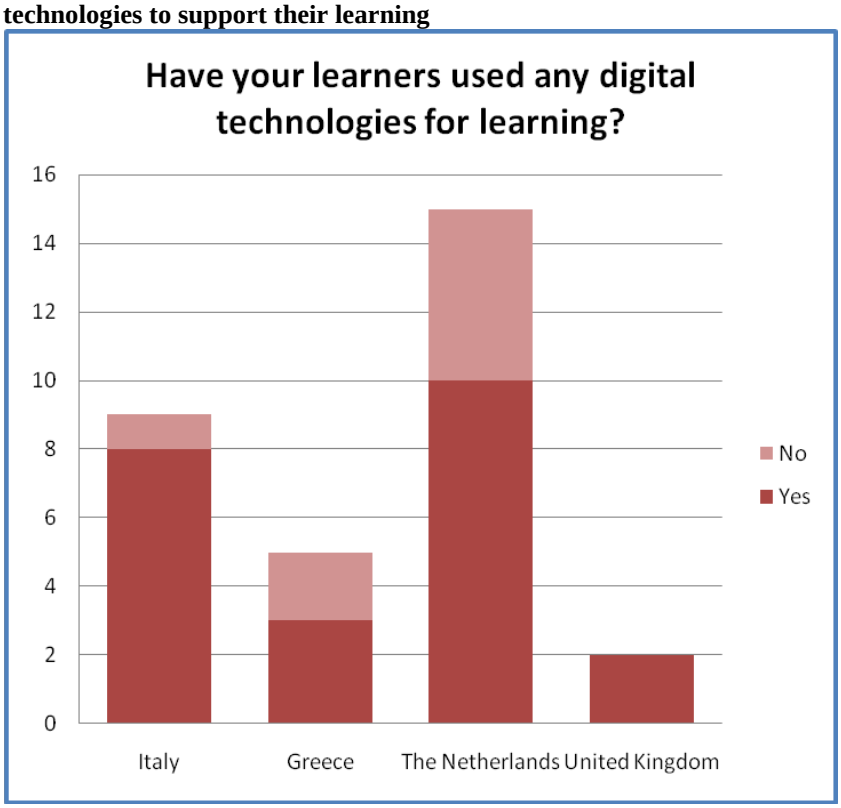
This figure shows that the highest proportion of participants previously using handheld devices is in England and Italy, with lower proportions in the Netherlands and Greece. Figure 8-4 shows the types of handheld devices used previously in each country.

Figure 8-4: Types of handheld devices used previously by country to support their teaching and learning



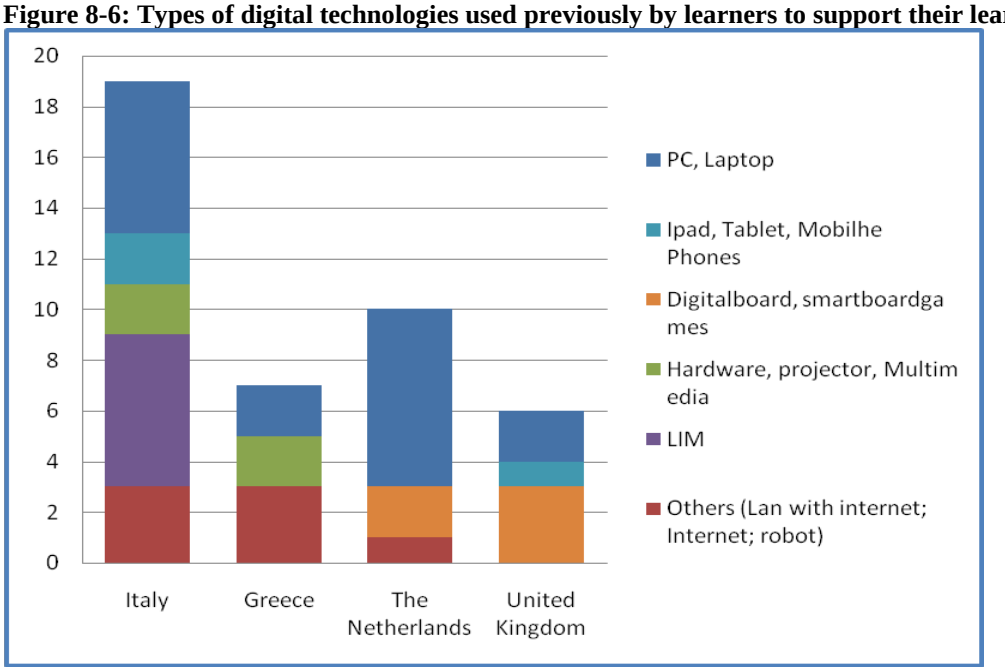
This figure shows that handheld devices used in Greece (for experimental purposes) are different from those used to support teaching and learning in other countries. Figure 8-5 shows the proportion of learners who have used digital technologies previously to support their learning.

Figure 8-5: Proportion of participants per country indicating learners have previously used digital technologies to support their learning



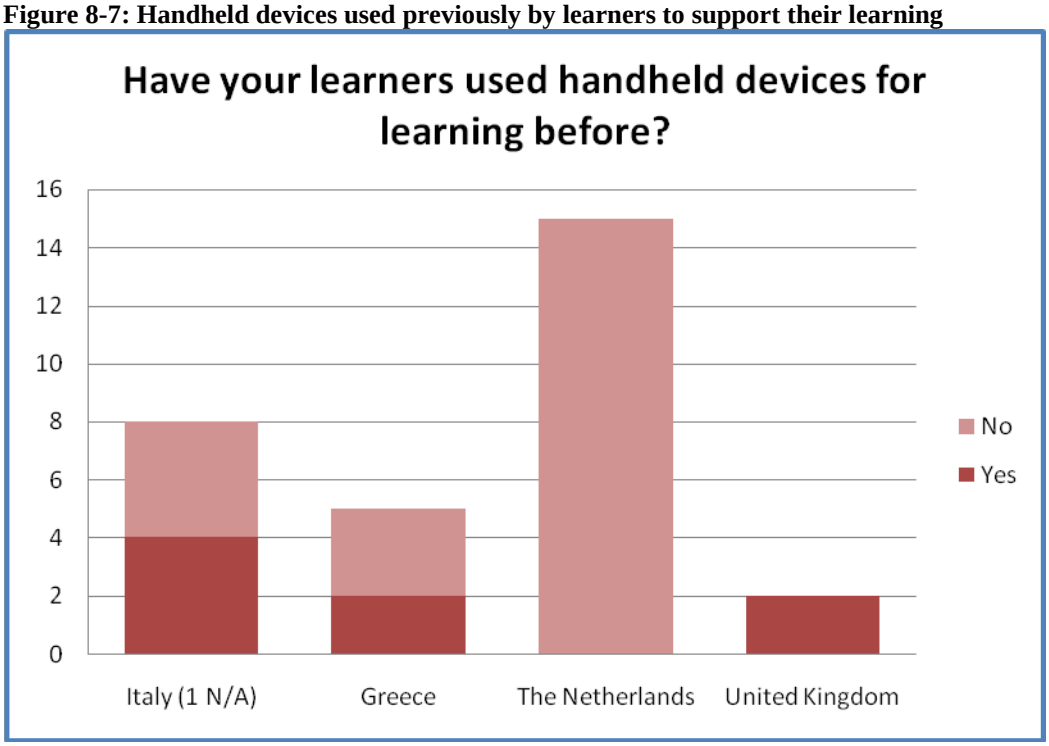
This figure shows that many respondents in all countries indicated that learners had used digital devices to support their learning. Figure 8-6 shows the types of devices they are reported to have used.

Figure 8-6: Types of digital technologies used previously by learners to support their learning



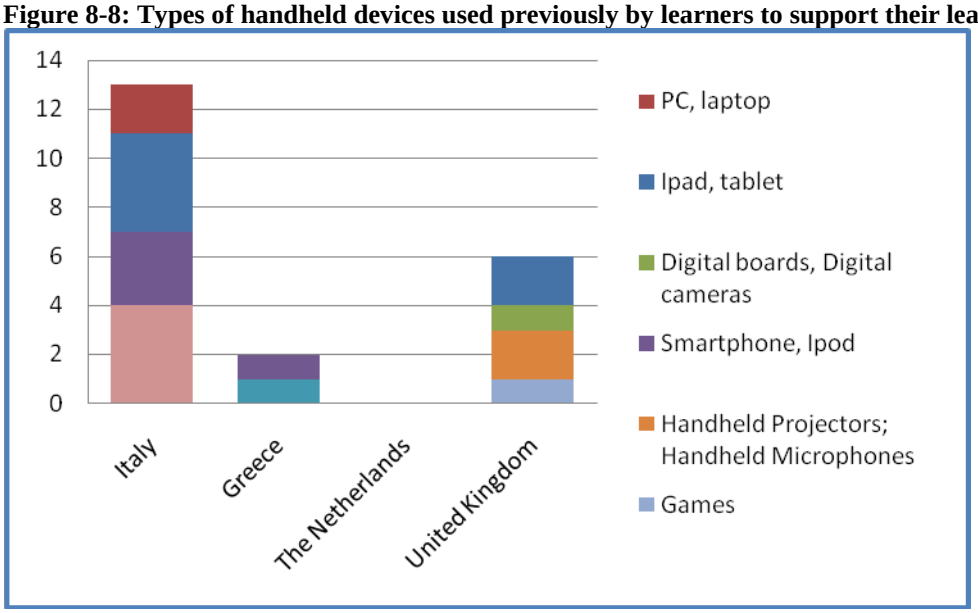
This figure shows that the proportion using PCs and laptops is higher in Italy and the Netherlands, the proportion using interactive whiteboards is higher in the Netherlands and England, while there is a higher proportion of use of LIM in Italy. Figure 8-7 shows the proportion of learners using handheld devices previously for their learning.

Figure 8-7: Handheld devices used previously by learners to support their learning



This figure shows that the proportion in the Netherlands is lower than in any of the other countries. Figure 8-8 shows the types of handheld devices used previously by learners.

Figure 8-8: Types of handheld devices used previously by learners to support their learning



This figure shows higher proportions of use of iPads and tablets in Italy and England, higher proportions of use of handheld projectors and microphones in England, whereas in The Netherlands participants reported no previous use. Figure 8-9 indicates the proportion of participants knowing of benefits of using handheld devices by country.

Figure 8-9: Proportion of participants per country knowing of benefits of using handheld devices in teaching and learning

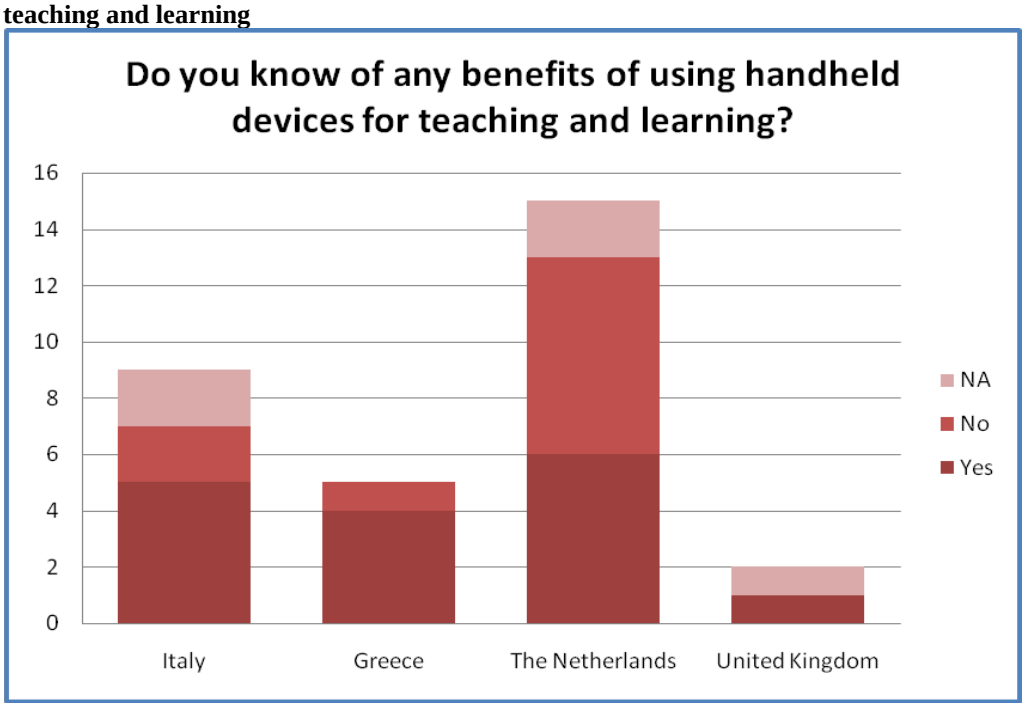


Figure 8-10 shows the benefits reports by participants in each country.

Figure 8.10: Benefits of using handheld devices in teaching and learning reported by participants

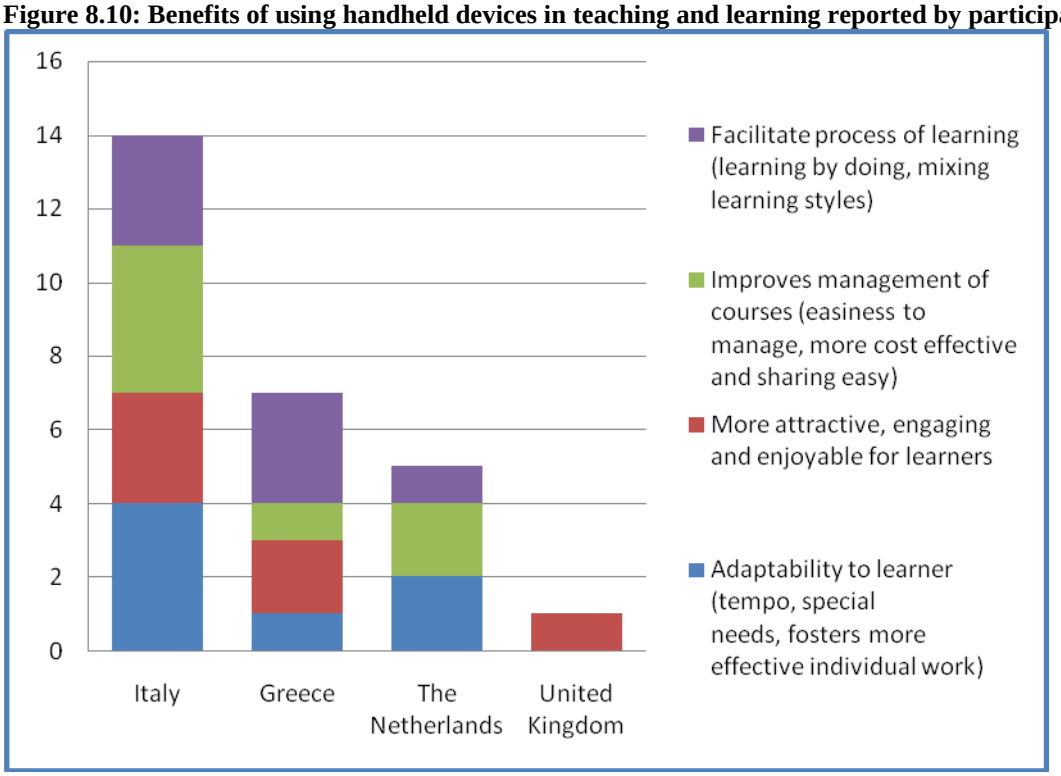


Figure 8-11 shows the proportion of participants in each country reporting knowing of issues arising when using handheld devices for teaching and learning.

Figure 8-11: Proportion of responses, per country, indicating issues arising when using handheld devices in teaching and learning

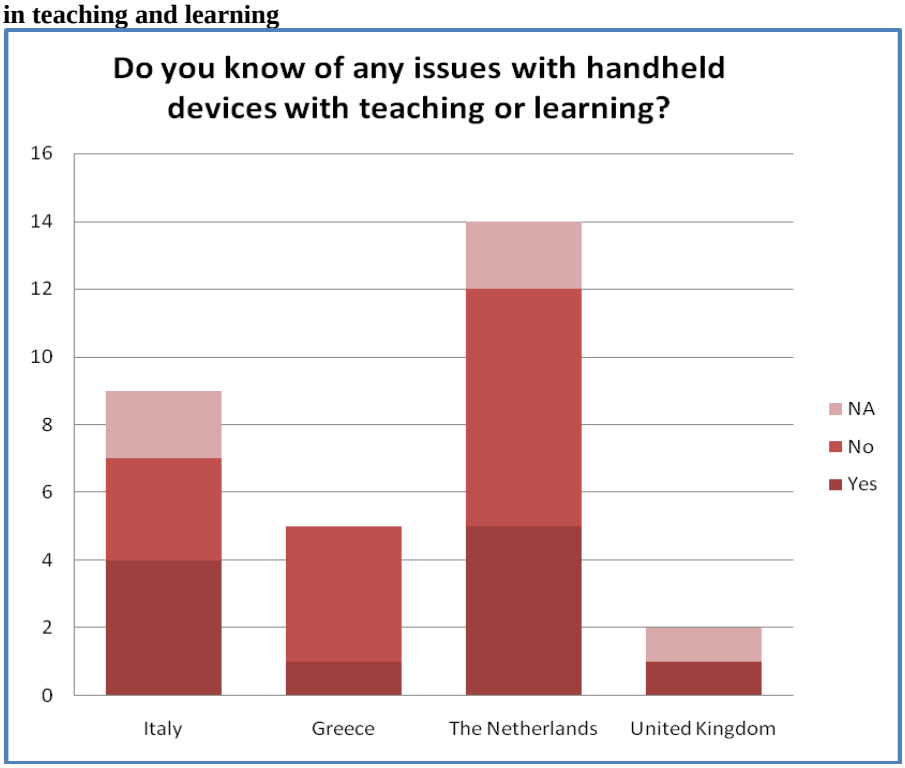
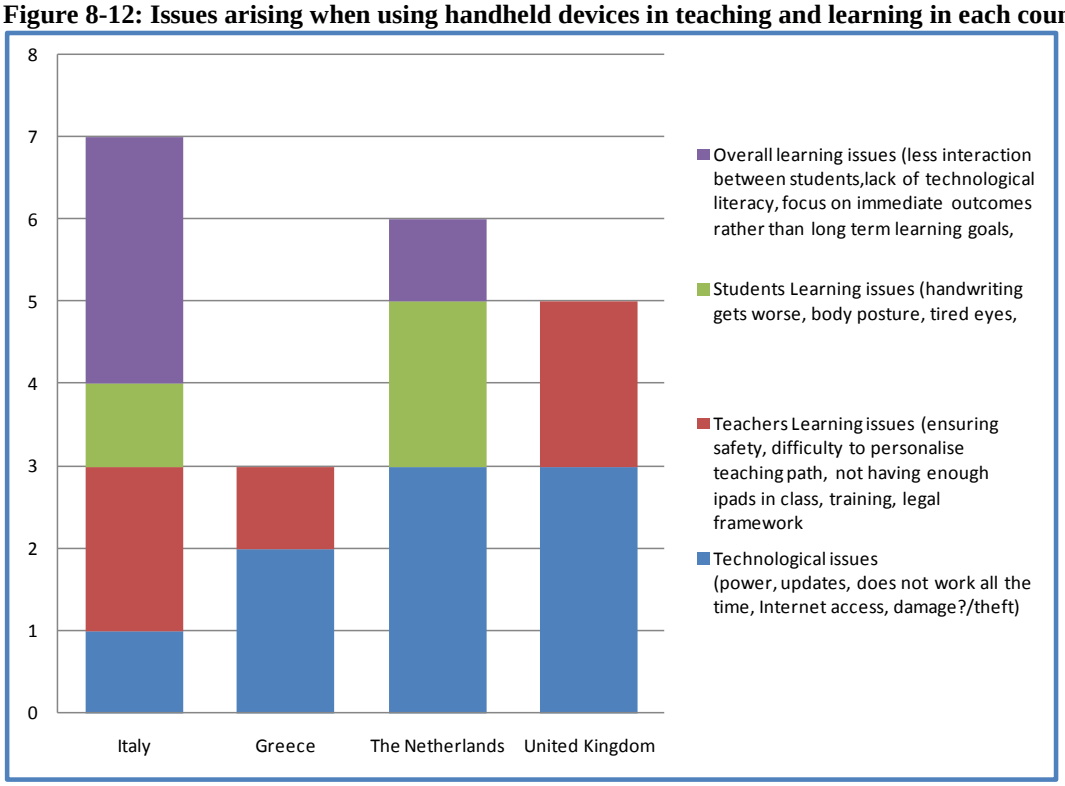


Figure 8-12 indicates the nature of the issues highlighted in each country.

Figure 8-12: Issues arising when using handheld devices in teaching and learning in each country



The figure above shows that the most commonly reported issues arising when using handheld devices are technological issues. Figure 8-13 shows the practices that participants would like covered in training sessions.

Figure 8-13 Practices that participant would like covered in the training sessions

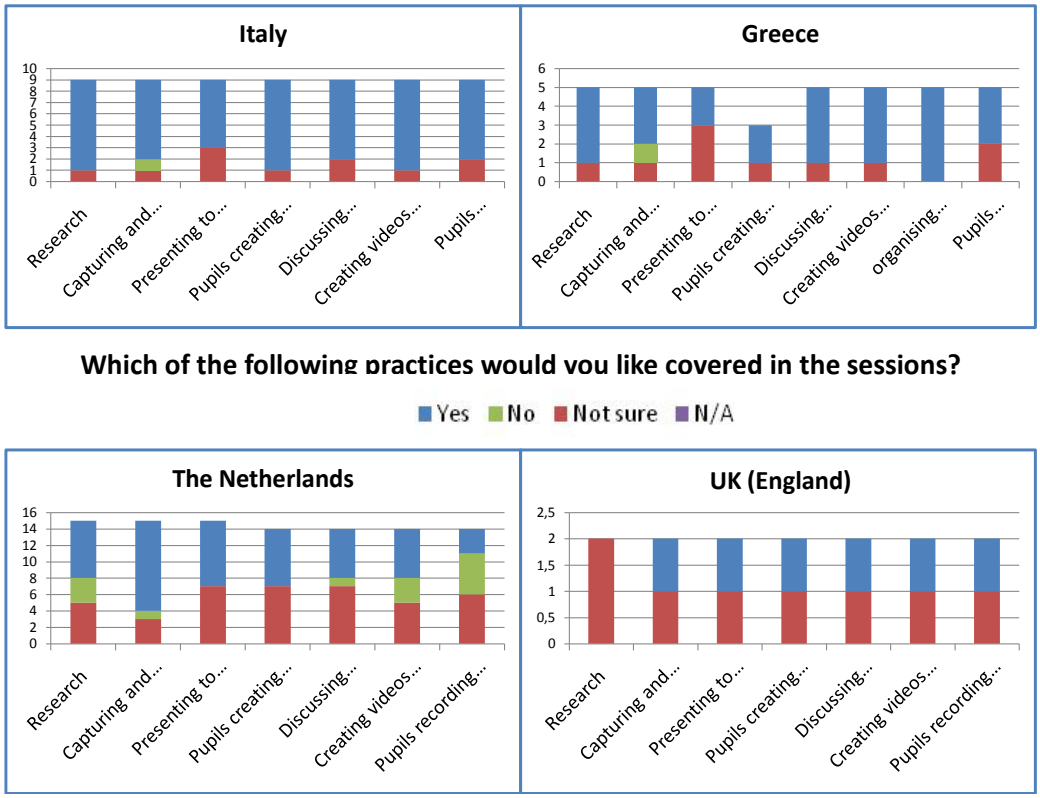
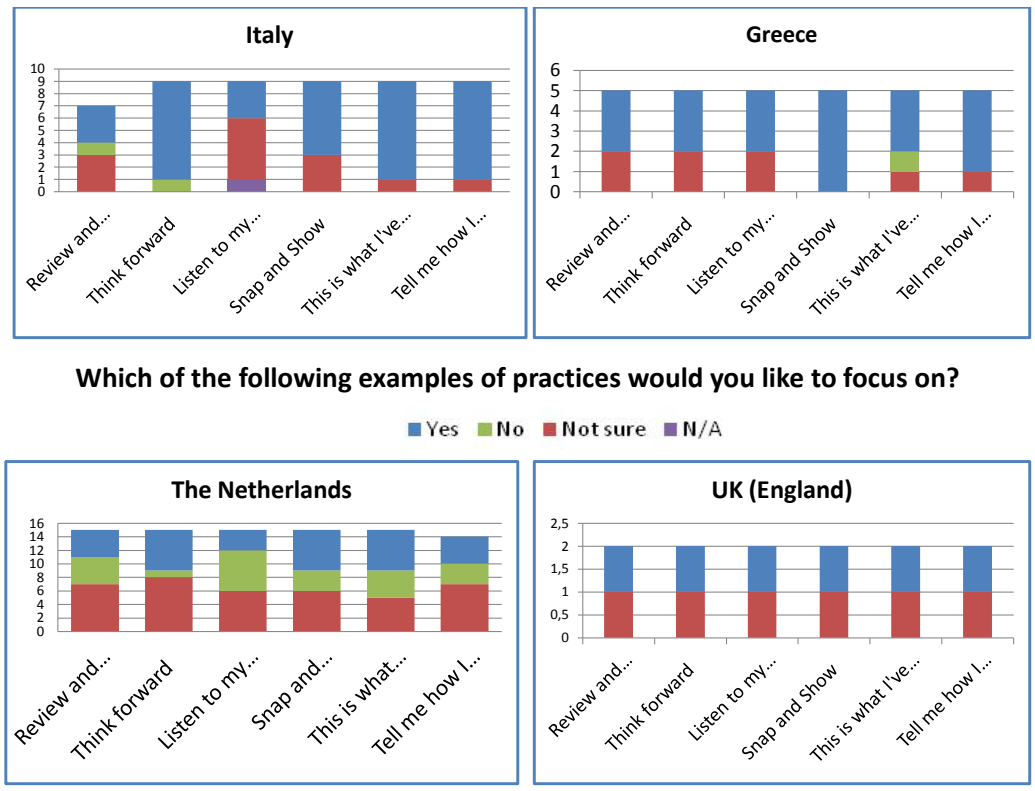


Figure 8-14 shows the types of practices that participants would like covered in the training sessions.

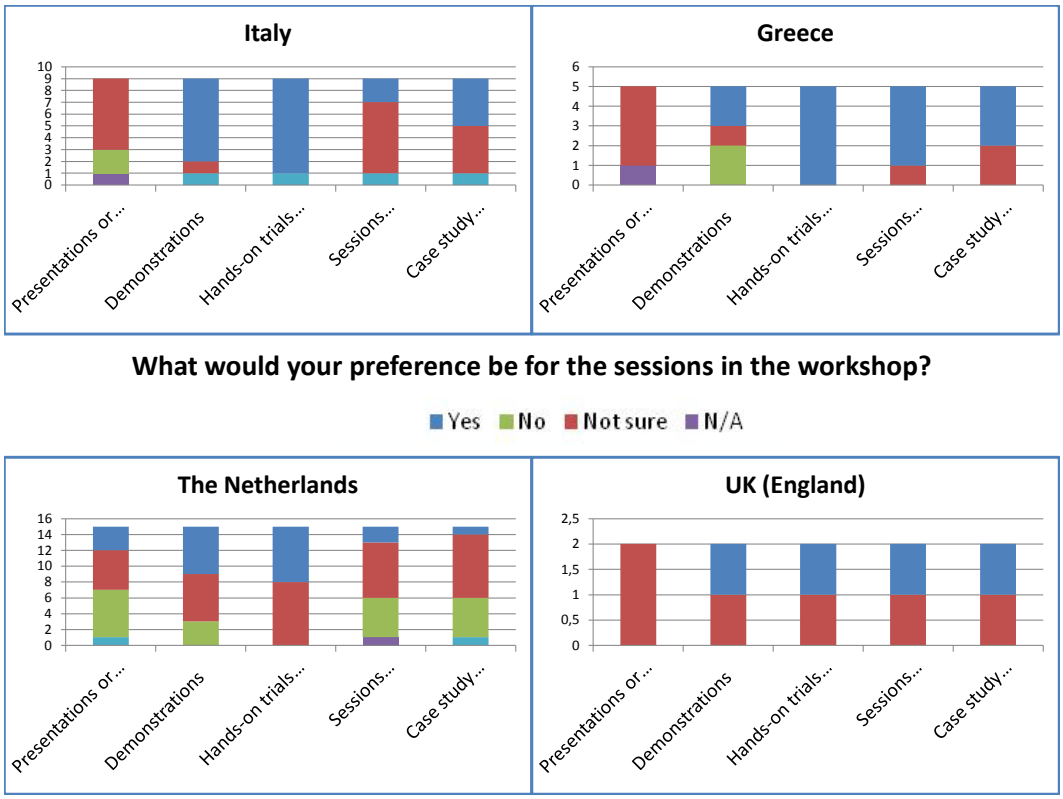
Figure 8-14: Types of practices that participants would like covered in the training sessions



Format of training sessions

Participants indicated the format of training sessions that they would like. Their responses are shown in Figure 8-15.

Figure 8-15: Format of training sessions requested



Comparative features highlighted by the needs analysis

Details within Chapters 3 to 8 are drawn together in the tables (8-1 to 8-5) below, which highlight important comparative features, similarities and differences between the groups of participants, and between countries. In each table, where a cell is coloured yellow, this indicates a difference from the overall picture shown when all teacher responses are grouped together.

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Age range taught	4-19 years, with most from 6-14 years	-	7-19 years, with most from 7-14 years	6-16 years, with most from 13-15 years	4-19 years, with most from 6-12 years	11-18 years
Subjects taught	A wide range, but most either all subjects or science and technology	-	Mostly science and technology, languages and literature, history and philosophy	Mostly science and technology, and others (special needs and management)	Mostly all subjects, mathematics, and languages and literature	-
Learners with certified special educational needs	21 out of the 27 have learners with special educational needs	-	6 out of 7 teachers	2 out of 3 teachers	12 out of 14 teachers`	1 out of 1 teacher
Learners with communication needs	11 out of 27 have learners with communication needs	-	5 out of 7 teachers	2 out of 5 teachers	3 out of 14 teachers	1 out of 1 teacher
Classes with special support teachers	22 out of 27 have classes with special support teachers	-	6 out of 7 teachers	2 out of 5 teachers	13 out of 14 teachers	1 out of 1 teacher

Table 8-1: Comparison of background features

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Prior use of digital technologies for teaching	25 out of 27	4 out of 4	8 out of 9	5 out of 5	14 out of 15	2 out of 2
Main prior digital technologies used for teaching	PCs, laptops, internet, robots, and LIM	Interactive whiteboards, netbooks, visualizers, PCs, and laptops	PCs, laptops, and LIM	Hardware, projectors, and multimedia	Interactive whiteboards	PCs, laptops, netbooks, visualizers, a variety of handheld devices, and iPads and tablets
Handheld devices used previously in teaching	9 out of 27	2 out of 4	5 out of 9	1 out of 5	3 out of 15	2 out of 2
Main prior handheld devices used for teaching	iPads, tablets, PCs and laptops	iPads, and tablets	PCs, laptops, iPads, and tablets	Experimental instruments in physics and chemistry	PCs, laptops, iPads, and tablets	Interactive games, and a variety of handheld devices including projectors, microphones, iPads and tablets
Prior use of digital technologies by learners for learning	20 out of 27	3 out of 4	8 out of 9	3 out of 5	10 out of 15	2 out of 2
Main prior digital technologies used by learners for learning	PCs, laptops, internet, robots, and LIM	PCs, laptops, iPads, and tablets	LIM, PCs, and laptops	Internet, and robots	PCs, and laptops	PCs, laptops, netbooks and visualizers
Prior handheld devices used by learners for learning	6 out of 27	2 out of 2	4 out of 9	2 out of 5	0 out of 15	2 out of 2
Main prior handheld devices used by learners for learning	Smartphones, iPods, Android devices, iPads, tablets, PCs, and laptops	Smartphones, projectors, and microphones	iPads, tablets, smartphones, and iPods	Experimental instruments, and Android mobile telephones	-	Interactive games, handheld projectors and microphones, iPads and tablets

Table 8-2: Comparison of background uses of digital technologies

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Knowing of benefits of using handheld devices for teaching and learning	16 out of 27	-	5 out of 9	4 out of 5	6 out of 15	1 out of 2
Main benefits identified	More attractive and engaging for learners, and improves the management of courses	-	Improves the management of courses, and adaptability to the learner	Facilitating the process of learning	Adaptability to the learner, and improves the management of courses	Adaptability to the learner, attractiveness and engagement, improving the management of courses, and facilitating the process of learning
Knowing of issues arising when handheld -devices are used in teaching and learning	11 out of 27	-	4 out of 9	1 out of 5	5 out of 15	1 out of 2
Main issues identified	Technological	-	Overall learning issues, and teaching issues	Technological	Technological, and student learning issues	Technological, and teacher learning issues
Existing knowledge of Apps or software	Mainly a few or none, with 38 items identified in total	Mainly a few, with 12 items identified in total	Mainly a few or some, with 13 items identified in total	Mainly none, with 6 items identified in total	Mainly a few or none, with 4 items identified in total	A lot or some, with 3 items identified in total

Table 8-3: Comparison of background knowledge for using handheld devices

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Main forms of support requested from training sessions	Technological and content knowledge	Issues and challenges, technological and pedagogical knowledge	Technological and content knowledge, and the learning environment	Technological, content and pedagogical knowledge, the learning environment, aspects of communication, issues and challenges	Technological and content knowledge	Pedagogical knowledge
Main features or benefits requested from the training	Enhanced focus gained from mobile learning moments, the provision of constant alertness, and the use of authentic teaching and learning materials	Mobility, developing face-to-face social interactions, supporting special educational needs, and language learning support	Supporting special educational needs, enhanced focus gained from mobile learning moments, the concept of interweaving learning interactions, and language learning support	Mobility, developing face-to-face social interactions, and uses of authentic teaching and learning materials	Enhanced focus gained from mobile learning moments, broadening assessment tasks, supporting special educational needs, and language learning support	Use of authentic teaching and learning materials, the concept of interweaving learning interactions, the benefit of informality, the influence of ownership, how students can choose or make preferences, the broadening of assessment tasks, and language learning support
Main approaches requested from the training sessions	Collaborative, situated and constructivist	Collaborative, constructivist, situated, informal and lifelong learning	Collaborative, constructivist, and situated	Constructivist, situated, collaborative, informal and lifelong learning	Collaborative, situated and constructivist	All approaches from a theoretical perspective

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Main practices requested from training sessions	Capturing and using imagery and video, research, and pupils creating their own notes and books in multimedia formats	Capturing and using imagery and video, creating videos for presentation to wider audiences, pupils recording video clips of lessons for later playback, and pupils creating their own notes and books in multimedia formats	Research, pupils creating their own notes and books in multimedia formats, and creating videos for presentation to wider audiences	Organising notes and work, research, discussing strengths and weaknesses of work presented and shared by pupils, and creating videos for presentation to wider audiences	Capturing and using imagery and video, presenting to teachers and peers, and pupils creating their own notes and books in multimedia formats	All except research
Main examples of practices requested from training sessions	Think forward, snap and show, this is what I've done and how I've done it, and tell me how I could improve this	Review and reflect, and this is what I've done and how I've done it	Think forward, this is what I've done and how I've done it, and tell me how I could	Snap and show, and tell me how I could improve this	Think forward, snap and show, and this is what I've done and how I've done it	All

Table 8-4: Comparison of features requested from the training sessions

Feature	All teachers (n=27)	All partners and trainers (n=4)	Participants from Italy (n=9)	Participants from Greece (n=5)	Participants from the Netherlands (n=15)	Participants from England (n=2)
Main formats of training sessions requested	Hands-on trials of practice, and demonstrations	Demonstrations, and hands-on trials of practice	Hands-on trials of practice, and demonstrations	Hands-on trials of practice, sessions captured on video, and case study examples	Hands-on trials of practice, and demonstrations	All except presentations

Table 8-5: Comparison of formats of training sessions requested

References

Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management, 31*(4), 569–578.

Passey, D. and Zozimo, J. (2014). *Mobile learning and information and communication technology teacher training in MLEARN partner countries: Research Report - Work Package 4*. Lancaster: Lancaster University.

U.S. Office of Personnel Management (n.d.). *Training and Development – Planning & Evluating: Training needs assessment.* Accessed at: http://www.opm.gov/policy-data-oversight/training-and-development/planning-evaluating/#url=Training-Needs-Assessment. Retrieved: 26 April 2014.

Appendix A

MLEARN training needs analysis questionnaire
Trainer and partner questionnaire

Information about the study
The MLEARN project, a European Union (EU)-funded project, will explore and promote teacher development of mobile learning practices in four member states – The Netherlands, the UK (England), Greece and Italy. The Department of Educational Research at Lancaster University has been commissioned by this project to undertake a training needs analysis. As you will be involved in this project, you are kindly asked to complete this questionnaire, to help support the design of the training so that it most effectively meets your needs as a trainer/partner. All trainers, and individuals each partner has identified to help support the training focus should complete this survey.

The questionnaire
The questionnaire should take you no more than 30 minutes to complete. Your participation is entirely voluntary; not participating or withdrawing from the study will not have any bearing on your relationship with the project organisation. We will use any responses you give us in ways to ensure your anonymity, and we do not request any personal details from you. The data you provide will be used to produce country and overview analyses that will be presented to the trainers and the partners of the project, to help them develop a training package to meet your needs. The analyses will be collected together into a single report, which may be published by the MLEARN project and by the authors, and may be used in subsequent academic publications.

You may submit your responses online – once you have answered the questions then click 'submit'. When you submit the questionnaire, you are indicating to us that you are happy to send the details, that you believe them to be as correct as possible, and that you are happy with the conditions for submitting them. If you wish to withdraw your responses for any reason, please let us know within 2 weeks of sending them, and we will destroy the completed questionnaire. The original questionnaire will be stored for 6 years, and may then be destroyed.

Contact details
If you have any questions relating to this study or to the questionnaire, please contact:

Professor Don Passey – Principal Investigator
Tel: 01524 592314 Email: d.passey@lancaster.ac.uk
Room: County South, D25, Lancaster University, Lancaster, LA1 4YD, UK.

Or
Dr Paul Ashwin – Head of Department
Tel: 01524 594443 Email: Paul.Ashwin@Lancaster.ac.uk
Room: County South, D32, Lancaster University, Lancaster, LA1 4YD, UK.

Part 1 – a little background

Are you? (Please tick those that apply to you.)

a partner	
a trainer	

Your country (Please tick the row that applies to you.)

Italy	
Greece	
The Netherlands	
UK (England)	

Part 2 – previous uses of digital technologies

Have you used any digital technologies in teaching or training before?	Yes	No

If so, which ones?	

Have you used any handheld devices in teaching or training before?	Yes	No

If so, which ones?	

Have your learners or trainees used any digital technologies in their learning before?	Yes	No

If so, which ones?	

Have your learners or trainees used handheld devices in their learning before?	Yes	No

If so, which ones?	

Part 3 – pedagogies using digital technologies

How much support during the training sessions do you think trainees should have on? (Please tick one box in each row.)

	a lot	**some**	**not very much**	**none at all**
Technological knowledge (what the device can do and how to use it)				
Content knowledge (what subjects and topics can be addressed using the devices and their applications)				
Pedagogical knowledge (how this is done through the development and deployment of appropriate teaching and learning activities)				
The learning environment beyond the classroom				
Aspects of communication and their links to teaching and learning				
Issues and challenges of using handheld devices				

Which of these features and benefits do you think should be included in the training? (Please tick one box in each row.)

	Yes	Not sure	No
Greater accessibility to information, and accessing information in context			
Uses of information in spatial or location, temporal, social, and technical contexts			
Mobility, and developing face-to-face social interactions			
Uses of authentic teaching and learning materials			
Providing constant alertness (so users can confront a situation as it happens, instead of postponing it until they reach their home or school)			
The enhanced focus gained from mobile learning 'moments'			
Learning supported by the convenience of time (increasing access to authentic teaching and learning materials that could be used at a time convenient to teachers, such as when they are preparing lesson plans, or to learners, while travelling to school)			
The concept of interweaving learning interactions using the features of the handheld devices (a novel concept in using handheld devices inside and outside the classroom, highlighting the combination of face-to-face social interaction with mobile learning moments)			
The benefit of informality			
The influence of ownership			
How students can choose or make preferences			
Saving time			
Broadening assessment tasks			
Supporting special educational needs			
Language learning support			
Enhancing pedagogical practices and value			

Which of the following examples focusing on practices linked to learning theories do you think are important to explore in the training? (Please tick one box in each row.)

	Yes	Not sure	No
Behaviouralist (such as drill-and-practice questions and answers)			
Constructivist (such as discussion on a specific topic or theme)			
Situated (such as working in a group on an aspect of interest)			
Collaborative (such as 5 pupils working in a group to create a single presentation)			
Informal and lifelong (such as developing ideas of how to use the handheld device when walking through a museum or gallery)			
Learning and teaching support (such as how to create other forms of assessment exercises)			

Part 4 – learning activities using digital technologies

How many Apps or pieces of software do you know that you can use for teaching or training in specific subjects and topics? (Please tick one box.)

A lot (more than 10)	Some (5-10)	A few (1-5)

Please name the ones that you use the most (up to 5) and explain why you use them.

App or piece of software	Why I use it

Which of the following practices do you think should be covered in the session using suitable examples or case studies? (Please tick one box in each row.)

	Yes	Not sure	No
research			
capturing and using imagery and video clips			
presenting to teachers and peers			
pupils creating their own notes and books in multimodal formats			
discussing strengths and weaknesses of work presented and shared by pupils			
creating videos for presentation to wider audiences			
organising notes and work			
pupils recording video clips of lessons for later playback			

Which of the following examples of practices can you provide as a case study or demonstration for trainees to focus on? (Please tick one box in each row.)

	Yes	Not sure	No
"Review and reflect", where pupils capture audio, imagery and video during lessons, use these in plenary sessions to reflect on what has been covered, consider the key elements learned, how these fit into wider subject or topic pictures, and how ideas might be used or taken further outside the classroom			
"Think forward", where pupils access future topic material via the Internet and capture relevant thoughts or ideas to contribute to discussions or presentations in class or through on-line discussions. Pupils can be encouraged to use the handheld devices at home to research topics for themselves			
"Listen to my explanations", where pupils record audio when they are completing homework assignments and these verbal explanations are listened to and marked by teachers			
"Snap and show", where pupils capture imagery, which is downloaded to a server and accessed through a computer or interactive whiteboard screen, for wider pupil discussion, perhaps made accessible to parents so that they can see and discuss events that have happened in school			
"This is what I've done and how I've done it", where pupils create presentations of how they have used mobile technologies to tackle particular activities, which are recorded and made accessible on appropriate web-sites for teachers and parents to see. Observing other pupils' stories and reports, pupils can include sound recordings of their own voice as well as text and pictures to form multi-modal texts			
"Tell me how I could improve this", where pupils can share their work in multimedia formats with peers, mentors, teachers or trusted adults in order to seek comments, evaluative feedback, assessments of their work, and ideas to improve their work			

Part 5 – format of the training session

What would your preferences be for the sessions in the workshop? (Please tick one box in each row.)

	A lot	Some	Not many	Very few
Presentations or lecture-like-sessions				
Demonstrations				
Hands-on trials of practice				
Sessions captured on video for reviewing afterwards				
Case study examples for review during and after sessions				

Thank you for completing the survey

Please click on the 'submit' button to send us your responses

Appendix B

MLEARN training needs analysis questionnaire

Teacher questionnaire

Information about the study

The MLEARN project, a European Union (EU)-funded project, will explore and promote teacher development of mobile learning practices in four member states – The Netherlands, the UK (England), Greece and Italy. The Department of Educational Research at Lancaster University has been commissioned by this project to undertake a training needs analysis. As you will be involved in this project, you are kindly asked to complete this questionnaire, to help us support the design of the training so that it most effectively meets your needs as a teacher.

The questionnaire

The questionnaire should take you no more than 30 minutes to complete. Your participation is entirely voluntary; not participating or withdrawing from the study will not have any bearing on your relationship with the project organisation. We will use any responses you give us in ways to ensure your anonymity, and we do not request any personal details from you. The data you provide will be used to produce country and overview analyses that will be presented to the trainers and the partners of the project, to help them develop a training package to meet your needs. The analyses will be collected together into a single report, which may be published by the MLEARN project and by the authors, and may be used in subsequent academic publications.

Please submit your responses by email to j.zozimo@lancaster.ac.uk

When you submit the questionnaire, you are indicating to us that you are happy to send the details, that you believe them to be as correct as possible, and that you are happy with the conditions for submitting them. If you wish to withdraw your responses for any reason, please let us know within 2 weeks of sending them, and we will destroy the completed questionnaire. The original questionnaire will be stored for 6 years, and may then be destroyed.

Contact details

If you have any questions relating to this study or to the questionnaire, please contact either:

Professor Don Passey – Principal Investigator
Tel: 01524 592314 Email: d.passey@lancaster.ac.uk
Room: County South, D25, Lancaster University, Lancaster, LA1 4YD, UK.

Dr Paul Ashwin – Head of Department
Tel: 01524 594443 Email: Paul.Ashwin@Lancaster.ac.uk
Room: County South, D32, Lancaster University, Lancaster, LA1 4YD, UK.

Part 1 – a little background

Your country (Please tick the country that applies to you.)

Italy	☐	**The Netherlands**	☐
Greece	☐	**England**	☐

The age range you teach:	
The subject(s) you teach (up to 3 in total):	

	Yes	No
Do any of your learners have certified special educational needs?	☐	☐

	Yes	No
Do any of your learners have communication needs?	☐	☐

	Yes	No
Do any of your learners have special support teachers?	☐	☐

Part 2 – previous uses of digital technologies

	Yes	No
Have you used any digital technologies in your teaching before?	☐	☐
If so, which ones?		

	Yes	No
Have you used any handheld devices in your teaching before?	☐	☐
If so, which ones?		

	Yes	No
Have your learners used any digital technologies for learning before?	☐	☐
If so, which ones?		

	Yes	No
Have your learners used handheld devices for learning before?	☐	☐
If so, which ones?		

	Yes	No
Do you know of any benefits of using handheld devices for teaching or learning?	☐	☐
If so, which ones?		

	Yes	No
Do you know of any issues with handheld devices with teaching or learning?	☐	☐
If so, which ones?		

Part 3 – pedagogies using digital technologies

How much support from the training sessions would you want on the following? (Please tick one box in each row.)

	a lot	some	not very much	none at all
Technological knowledge (what the device can do and how to use it)	☐	☐	☐	☐
Content knowledge (what subjects and topics can be addressed using the devices and their applications)	☐	☐	☐	☐
Pedagogical knowledge (how this is done through the development and deployment of appropriate teaching and learning activities)	☐	☐	☐	☐
The learning environment beyond the classroom	☐	☐	☐	☐
Aspects of communication and their links to teaching and learning	☐	☐	☐	☐
Issues and challenges of using handheld devices	☐	☐	☐	☐

Which of the following features or benefits of handheld devices for teaching and learning would you like covered in the training? (Please tick one box in each row.)

	Yes	Not sure	No
Greater accessibility to information, and accessing information in context	☐	☐	☐
Uses of information in spatial or location, temporal, social, and technical contexts	☐	☐	☐
Mobility, and developing face-to-face social interactions	☐	☐	☐
Uses of authentic teaching and learning materials	☐	☐	☐
Providing constant alertness (so users can confront a situation as it happens, instead of postponing it until they reach their home or school)	☐	☐	☐
The enhanced focus gained from mobile learning 'moments'	☐	☐	☐
Learning supported by the convenience of time (increasing access to authentic teaching and learning materials that could be used at a time convenient to teachers, such as when they are preparing lesson plans, or to learners, while travelling to school)	☐	☐	☐
The concept of interweaving learning interactions using the features of the handheld devices (a novel concept in using handheld devices inside and outside the classroom, highlighting the combination of face-to-face social interaction with mobile learning moments)	☐	☐	☐
The benefit of informality	☐	☐	☐
The influence of ownership	☐	☐	☐
How students can choose or make preferences	☐	☐	☐
Saving time	☐	☐	☐
Broadening assessment tasks	☐	☐	☐
Supporting special educational needs	☐	☐	☐
Language learning support	☐	☐	☐
Enhancing pedagogical practices and value	☐	☐	☐

Here are some learning theories. Which do you think are important for learning for your children? (Please tick one box in each row.)

	Yes	Not sure	No
Behaviouralist (such as drill-and-practice questions and answers)	☐	☐	☐
Constructivist (such as discussion on a specific topic or theme)	☐	☐	☐
Situated (such as working in a group on an aspect of interest)	☐	☐	☐
Collaborative (such as 5 pupils working in a group to create a single presentation)	☐	☐	☐
Informal and lifelong (such as developing ideas of how to use the handheld device when walking through a museum or gallery)	☐	☐	☐
Learning and teaching support (such as how to create other forms of assessment exercises)	☐	☐	☐

Part 4 – learning activities using digital technologies

How many Apps or pieces of software do you know that you can use for teaching in specific subjects and topics? (Please tick one box.)

A lot (more than 10)	Some (5-10)	A few (1-5)	None
☐	☐	☐	☐

If you know of some already, please name the ones that you use the most (up to 5) and explain why you use them.

App or piece of software	Why I use it

Which of the following practices would you like covered in the sessions? (Please tick one box in each row.)

	Yes	Not sure	No
research	☐	☐	☐
capturing and using imagery and video clips	☐	☐	☐
presenting to teachers and peers	☐	☐	☐
pupils creating their own notes and books in multimodal formats	☐	☐	☐
discussing strengths and weaknesses of work presented and shared by pupils	☐	☐	☐
creating videos for presentation to wider audiences	☐	☐	☐
organising notes and work	☐	☐	☐
pupils recording video clips of lessons for later playback	☐	☐	☐

Which of the following examples of practices would you like to focus on? (Please tick one box in each row.)

	Yes	Not sure	No
"Review and reflect", where pupils capture audio, imagery and video during lessons, use these in plenary sessions to reflect on what has been covered, consider the key elements learned, how these fit into wider subject or topic pictures, and how ideas might be used or taken further outside the classroom	☐	☐	☐
"Think forward", where pupils access future topic material via the Internet and capture relevant thoughts or ideas to contribute to discussions or presentations in class or through on-line discussions. Pupils can be encouraged to use the handheld devices at home to research topics for themselves	☐	☐	☐
"Listen to my explanations", where pupils record audio when they are completing homework assignments and these verbal explanations are listened to and marked by teachers	☐	☐	☐
"Snap and show", where pupils capture imagery, which is downloaded to a server and accessed through a computer or interactive whiteboard screen, for wider pupil discussion, perhaps made accessible to parents so that they can see and discuss events that have happened in school	☐	☐	☐
"This is what I've done and how I've done it", where pupils create presentations of how they have used mobile technologies to tackle particular activities, which are recorded and made accessible on appropriate web-sites for teachers and parents to see. Observing other pupils' stories and reports, pupils can include sound recordings of their own voice as well as text and pictures to form multi-modal texts	☐	☐	☐
"Tell me how I could improve this", where pupils can share their work in multimedia formats with peers, mentors, teachers or trusted adults in order to seek comments, evaluative feedback, assessments of their work, and ideas to improve their work	☐	☐	☐

Part 5 – format of the training session

What would your preferences be for the sessions in the workshop? (Please tick one box in each row.)

	A lot	Some	Not many	Very few
Presentations or lecture-like-sessions	☐	☐	☐	☐
Demonstrations	☐	☐	☐	☐
Hands-on trials of practice	☐	☐	☐	☐
Sessions captured on video for reviewing afterwards	☐	☐	☐	☐
Case study examples for review during and after sessions	☐	☐	☐	☐

Thank you for completing the survey

Please send your completed responses by email to j.zozimo@lancaster.ac.uk

6th May 2014

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