



# Enhancing Workplace Learning Through Mobile Technology

<https://wpltech.wordpress.com/>

## The resources

### PLANNING



Read more about  
Planning learning experiences

### PROFESSIONALLY & SAFELY



Read more about  
Using mobile technology  
professionally and safely

### DIALOGUE



Read more about  
Initiating dialogue

### NETWORKS



Read more about  
Establishing networking activities

### 'ON-THE-GO'



Read more about  
Creating learning activities on-the-go

### REFLECTING



Read more about  
Reflecting on practice experience

### TIME & PLACE



Read more about  
Considering issues of time and place

### GPS FOR WPL



Read more about  
Navigating the WPL landscape

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# ***Enhancing Workplace Learning through Mobile Technology***

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## Table of Contents

Introduction	5
Welcome	5
About the project	5
The Mobile Technology Capacity Building Framework	5
About the framework	5
Purpose	5
Five dimensions of student agency	6
Seven teaching resources	6
One student resource	6
Using mobile technology for WPL	6
How to use the resources	7
Adapting the resources	7
Implementing the resources	7
The resources	8
Planning learning experiences	8
Planning tasks ahead of time	8
Ladder of student participation	8
Creating learning resources	8
Creating learning tasks	9
GPS for WPL resources	9
Why plan learning experiences?	10
Using personal mobile devices professionally and safely	11
Unpacking explicit and implicit use of mobile technology for learning and work	11
Considering safe use of device and content	12
GPS for WPL resources	12
How to identify professional and safe practices?	13
Initiating dialogue	13
Strategic questions for initiating dialogue	13
GPS for WPL resources	14
Why initiate dialogue about and with mobile technology?	14
Establishing networking activities	16
Networking guiding questions	16
Networking platforms to enhance learning	16
How to build a networked community	17
GPS for WPL resources	17

How to build and participate in professional online networks?	17
Creating learning activities on-the-go	18
Problem-solving approach to identifying learning opportunities with mobile technology	18
GPS for WPL resources	19
How to use mobile technology to seize learning opportunities as they emerge?	19
Deepening reflection	21
Selecting the appropriate mobile technology functions for reflection	21
GPS for WPL resources	22
Why use mobile technology to enhance students' reflection on practice?	22
Considering issues of time and place	24
When to use personal mobile device or face-to-face	24
GPS for WPL resources	25
Why choose between face-to-face and technology-mediated interactions?	25
GPS for WPL	27

## Introduction

### **Welcome**

The 'Enhancing Workplace Learning through Mobile Technology' project explores the intersection of university education, mobile learning and workplace learning (WPL). We are interested in finding out how mobile technology can be creatively integrated into WPL to meet the needs of different kinds of students and unique institutional and placement contexts.

The [resources](#) produced through this project inform and contribute to debates and the future development of nation-wide standard agreements, policy design and implementation pertaining to technology-enhanced WPL.

### **About the project**

How can mobile technology be creatively integrated into WPL to meet the needs of different kinds of students and unique discipline and organisational contexts?

'Enhancing Workplace Learning through Mobile Technology' explores how students navigate the intersection of university education and WPL using mobile technology.

The [framework](#) and [resources](#) produced through this project inform and contribute to debates and the future development of nation-wide standard agreements, policy design and implementation pertaining to technology-enhanced WPL.

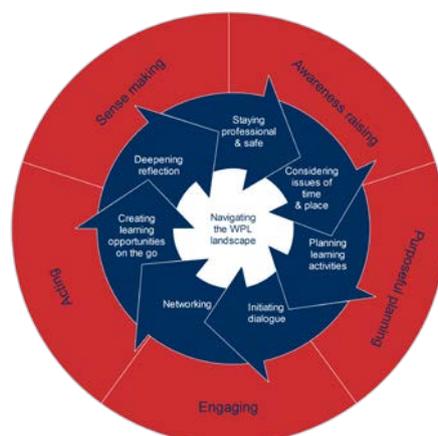
## The Mobile Technology Capacity Building Framework

The Mobile Technology Capacity Building Framework aims to enhance students' WPL experiences and, ultimately, increase their agency (their capacity to learn and act appropriately) while on placement. It consists of a [set of resources](#) designed to enhance key pedagogical principles of WPL and provides designs for core learning outcomes.

### **About the framework**

#### **Purpose**

Just like WPL itself, enhancing it through mobile technology needs thoughtful planning, implementation and evaluation. The Mobile Technology Capacity Building Framework for WPL aims to enhance students' WPL experiences and, ultimately, increase their agency (capacity to learn and act appropriately) while on placement. It has been designed to help students, academic teachers and workplace educators (WPEs) achieve a shared understanding of how students can best use their personal mobile devices for WPL and make sense of the entangled relationships between learning, technology and work.



The framework consists of a set of resources designed to solve recurring pedagogical problems. These resources critically discuss the main issues and opportunities of using personal mobile devices

for learning in workplaces. They seek to inspire, enable and act as carriers of improved practice, teaching skills and technology-mediated learning for academic teachers, WPEs and students.

This Mobile Technology Capacity Building Framework has been developed to help teachers create their own resources relevant to their specific needs and to stimulate innovation. Therefore the framework is neither prescriptive, nor focused on application development, nor only focused on developing digital literacy and it is not discipline-specific.

### **Five dimensions of student agency**

The red outer ring of the framework represents the five dimensions of student agency. These dimensions are the learning phases, or processes, required to develop students' capacity to learn and act appropriately in WPL. They are:

- Awareness raising
- Purposeful planning
- Engaging
- Acting
- Sense-making

These phases are aligned with different levels of interactive online capabilities and several learning and teaching theories: experiential learning theory, reflective and practice learning, and educating the deliberate professional.<sup>1</sup>

### **Seven teaching resources**

The blue middle ring of the framework represents the seven teaching resources. These resources address seven themes that need to be considered when using mobile technology in WPL. The themes and teaching resources are:

- [Planning learning experiences](#)
- [Using personal mobile devices professionally and safely](#)
- [Initiating dialogue](#)
- [Establishing networking activities](#)
- [Creating learning activities on the go](#)
- [Deepening reflection](#)
- [Considering issues of time and place](#)

Each resource consists of two academic components: a thematic discussion and accompanying pedagogical artefacts. The thematic discussion is a narrative that includes a problem statement, contextualising examples, references and pedagogical principles to provide a deeper understanding of the area of concern. These narratives are intended to be used as a trigger for academics to start discussions about how to customise the accompanying artefact for their specific contexts. The associated pedagogical artefacts comprise practical examples of repurposable tasks designed to help academics translate the thematic discussions and examples into resources relevant to their own practice and discipline. They have mostly been designed for academics but can also be used with colleagues (educational designers, information technology experts, WPEs involved in the preparation of WPL) to help them fine-tune the artefacts and the guidance that students will need.

### **One student resource**

At the centre of the framework is the [GPS for WPL](#) specifically designed to help students navigate the WPL landscape. Through bite size information, tasks and further readings, it helps student consider issues relevant to the seven themes.

### **Using mobile technology for WPL**

The 'Enhancing Workplace Learning through Mobile Technology' project's findings from surveys, focus groups and interviews provide insights into how mobile technology can be creatively integrated

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<sup>1</sup> Trede, F. & McEwen, C. (2016). Carving out the territory for educating the deliberate professional. In F. Trede & McEwen, C. (Eds.) *Educating the deliberate professional: Preparing for future practices*, Dodrecht: Springer.

into WPL to meet individual needs of students and unique institutional and placement policies and practices around the use of personal mobile devices and social media. The findings also point to mobile learning solutions to persistent WPL challenges and problems, and provide some evidence for the need to better understand the barriers and drivers for uptake of technology use to enhance WPL at individual, placement and sector levels.

More specifically, data shows that there was self-reported high use of mobile devices, high confidence in using mobile devices, many opportunities to use mobile devices, and positive impact on connection and learning. However, data also highlighted that there was a need for better preparation and training, adherence to policies and guidelines, more reliable internet access, broader integration of technology use with learning and a greater focus on people and pedagogy.

The findings have helped identify pedagogically sound capacity building principles used to develop a set of resources to enhance technology-mediated practices and learning, which constitutes a [Mobile Technology Capacity Building Framework](#).

### ***How to use the resources***

The Mobile Technology Capacity Building Framework for WPL includes eight resources. These have been designed for teachers to help students become better at managing themselves as professionals who are continually learning – making good use of technology as they do so.

The resources are:

1. [Planning learning experiences](#)
2. [Using personal mobile devices professionally and safely](#)
3. [Initiating dialogue](#)
4. [Establishing networking activities](#)
5. [Creating learning activities on the go](#)
6. [Deepening reflection](#)
7. [Considering issues of time and place](#)
8. [The GPS for WPL](#)

Resources 1 to 7 are series of thematic discussions and artefacts. The thematic discussion includes a problem statement, contextualising examples, references and pedagogical principles to provide a deeper understanding of the area of concern. The artefacts are practical instructions and tasks that teachers can adapt and use with students and/or WPEs.

Resource 8, the GPS for WPL, is an online tool for students to quickly access bite size information, tasks and further reading relevant to the seven themes covered in the above resources.

### **Adapting the resources**

The resources on this website should be adapted to be used appropriately with your students. There can be huge differences between professions, students and placement settings, with respect to the appropriate use of mobile devices. Views on what is productive and what is acceptable are changing over time. So we cannot say precisely what you will need – that is why the resources here need to be customised. Besides that, most students need guidance about how to make good use of mobile technology in WPL.

You will need to strike the right balance between telling students what to do and helping them develop the capacity to make their own professional learning decisions. Some students may need stronger scaffolding than others. So you need to make judgements, when customising these resources, about the degree of guidance or freedom they need.

### **Implementing the resources**

We suggest that you use the resources in discussions with colleagues (teachers, WPEs) who work with you on WPL preparation. Ideally, such discussions can be very useful in fine-tuning the resources according to the level of guidance that students will need. Also, the material we are providing can be very good at stimulating focused discussions on what students most need. Ask yourself: “Am I willing to use something new?” or “How can I re-purpose something that I am already using?”

The resources can be thought of as sitting at different and also overlapping points in a learning cycle/spiral of students' activity – flowing from awareness raising through engagement to sense-making. They can also be used with students before, during and after placements.

For WPEs in the host organisations, the resources can be used to help them supervise, assess and/or mentor students in their workplace. For academics, they can be used at all stages of curriculum design of a WPL program.

## The resources

### Planning learning experiences

#### Planning tasks ahead of time

There is value in planning WPL tasks ahead of time, including pre-placement meetings; regular, formal check-in meetings during students' placement time; and a post-placement meeting. These meetings and check-in times can be planned with academics and WPEs as well as with peers. Academics provide input into the content and purpose of these scheduled meetings. These planning activities can also be conducted by groups of students, academics and WPEs, who can meet to decide together how each will participate in designing WPL experiences. Mobile technology might also be used to facilitate meetings, especially when time and location barriers prohibit face-to-face meetings, and to enable a continuous process of collaboration between the parties that enhances the planning process.

#### Ladder of student participation

Bovill and Bulley<sup>2</sup> developed the “Ladder of student participation in curriculum design” based on Arnstein’s *Ladder of Citizen Participation*.<sup>3</sup> The ladder provides a range of levels of student participation: from the lowest level (teachers control decision-making) through shared decision-making levels to the highest (students control the decision-making and have substantial influence). The highest level includes tasks such as students designing learning outcomes and projects. The ladder can be used by academics, WPEs and students to identify the existing, and desired, levels of student participation in planning their WPL experiences.

The following table can be completed in groups or individually by students, academics and/or WPEs.

Learning activities	Tasks	Resources required
Initiated by student		
Negotiated between students and WPEs		
Negotiated between students and academics		

#### Creating learning resources

In a WPL context, assessment tasks could engage students in creating learning resources about a specific topic using an online tool such as [scoop.it](http://scoop.it), an easy to use online content curation platform.

<sup>2</sup> Bovill, C & Bulley, CJ (2011). A model of active student participation in curriculum design: exploring desirability and possibility. In Rust, C. *Improving Student Learning (18) Global theories and local practices: institutional, disciplinary and cultural variations*. Oxford: The Oxford Centre for Staff and Educational Development, pp176-188.

<sup>3</sup> Arnstein, SR (1969). A ladder of citizen participation, *Journal of the American Institute of Planners*, 35(4), 216-224.

Students could choose, annotate and share three to five of the most important resources on a specific topic. This task could be a one-off exercise, or could also lead to the development of a larger collection of resources over a longer time period.

Groups of students can create a resource that would be useful for them and their peers to help them use a specific media tool. Consider using the questions as drivers:

- How can you use mobile technologies ethically in the workplace?
- How can you use LinkedIn or Facebook for professional learning?

Individual students could undertake an open-ended task, such as designing and creating an innovative resource that would help them enhance their learning while on placement using mobile technologies. To support students with this task, lecturers could provide feedback on students' initial design ideas before students finalise and implement their resource.

### Creating learning tasks

The following table is a planning tool for students to select WPL tasks in a range of learning domains that will be of most value to them.

Learning domains	Tasks	Resources required
<b>Technical skills</b>	Professional technical skills: plan how you will use mobile technology to enhance your learning do professional technical skills (e.g. Record your own performance for subsequent feedback using mobile technology); research what kind of technology and apps are needed; identify technical compatibility issues; time and space arrangements, relevant institutional policies, required permissions and other <u>ethical and legal considerations</u>	
<b>Initiative and agency</b>	Initiative and agency: plan how you will use mobile technology to enhance your professional work and prepare for this. What kinds of apps you will use? What kind of access and connectivity you need? Do you need to learn to use them, test or adapt them before beginning your <u>placement?</u>	
<b>Collaboration and engagement in community of practice</b>	Collaboration and engagement in communities of practice: plan how you will use mobile technology to stay connected with and engaged within a community of practice (peers and professionals); e.g. What types of professional online networks exist? How could you benefit from joining them? How could you contribute to them? Which community of practice is worth joining and which not? How can you join them? What do you need to do to gain access during work placement?	
<b>Professional identity formation</b>	Professional identity formation: Plan how you will use mobile technology to enhance your reflection on your emerging professional identity; e.g. How you will collect evidence of your own performance using mobile technology, how you will collect information about leading professionals, how you will record your personal experiences/journal, how you will enhance how you present yourself and in other ways articulate your professional identity.	

### GPS for WPL resources

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [Why use mobile technology on placement](#)

- [Before placement](#)
- [Technology options](#)

### **Why plan learning experiences?**

As an element of the capacity building framework designed to help students make better use of their personal mobile devices (PMDs) for WPL, this specific resource aims to help academic teaching staff and WPEs facilitate learning experiences that help students make the most of their placement using mobile technology.

Due to the messy reality of workplaces, students will encounter informal, highly complex, and, at times, ill-defined learning contexts and professional experiences. Students on placement may need guidance to learn to value reflection and integrate theoretical, personal and cultural knowledge. The WPL context includes physical, material, emotional, cultural aspects that together shape what is the best way to act in a given situation.<sup>4</sup> Developing practice knowledge and capabilities involves tactile, cognitive, emotional, personal and social elements.<sup>5</sup>

### **How to help students plan learning experiences with the use of their PMDs for placement ahead of time? How to provide input into the purpose and content of these planned tasks?**

While academics, WPEs and students may be keen for students to use their PMDs to make the most of their WPL experiences, there is a range of challenges they may face. These challenges include:

#### ***Learning design vs. Learning reality***

Students may engage in learning activities and assessment tasks in ways that are very different to how academic staff intended it. Due to the nature of practice, there always remains a degree of uncertainty of what students might learn. The substance of students' learning may differ markedly from one workplace to another as practice is a social, relational and discursive activity and each workplace has its own culture.

#### ***Didactic vs Self-directed learning***

Students' experiences of prescriptive educational experiences may inhibit their intrinsic motivation and stifle their creative drive to seek, design and integrate their own learning. Learning experiences can be designed to reinforce power relationships and generate compliance, or to encourage safe participation, shared decision-making and student agency.

#### ***Professional vs. student role***

WPL is conceptualised as a site for professional socialisation: the development of students' professional identity, and social and cognitive practices. However, students' view of themselves may be dominated by their role as a student, precluding their engagement in their professional community of practice and development as practitioners.<sup>6</sup>

#### ***Mobile technology***

Students' and staff's levels of knowledge, experience and confidence in using mobile technologies and learning vary enormously. Also, perceptions of acceptable practices with mobile devices vary widely across individuals, disciplinary contexts, and maturity of organisational technological implementation. Perceptions of acceptable and unacceptable practices may be negotiated with students (participation), discussed with (consultation), communicated to (informed) or only addressed through a breach of rules (disciplined).

#### ***Responsibility for and approaches to learning***

The roles and responsibility of academics, WPEs and students in WPL may not be identified and understood, and may vary with location, circumstance or time. In addition to this, each may hold their own theories of learning and these may not be consciously articulated or shared with others.

<sup>4</sup> Walker, M (2005). Higher education pedagogies: A capabilities approach. Maidenhead, UK: Open University Press.

<sup>5</sup> Ellström, P-E (1997) The many meanings of occupational competence and qualification. Journal of European Industrial training, 21(6/7): 266-274. <http://www.emeraldinsight.com/doi/abs/10.1108/03090599710171567>

<sup>6</sup> Wenger, E (1998) *Communities of Practice: Learning, Meaning, and Identity*, Cambridge, Cambridge University Press.

### ***Practice capabilities***

Traditional assessment practices in higher education evaluate students' individual performance, not their capacity to learn from mistakes and develop their sense of responsibility and collegiality. Practice capabilities are to be learnt and further developed while on placement. The capability to do something is based on knowledge and skills, but also on the conditions students find in particular workplaces.

Therefore: **Academic staff and WPEs need to help students identify who designs what learning component and how. Involving students as active participants in planning their own learning experiences provides them with greater opportunities to develop a sense of agency and the capability to self-regulate and reflect on their learning.**

It is worth noting that mobile technology can also be used at each planning stage as well as each phase of the learning experiences to enhance opportunities to learn, manage students' activities and engagement in the learning process. Students can harness and develop their practice and digital capabilities with guidance to develop awareness of their existing technologies, digital literacies and other skills that can be used to design learning experiences.

### ***Using personal mobile devices professionally and safely***

#### **Unpacking explicit and implicit use of mobile technology for learning and work**

While on WPL placement, students require help to identify professional boundaries and fully understand the differences between:

- formal vs. informal places and spaces
- learning vs. working activities
- public vs. private spheres
- home (private) vs. placement (professional) settings
- face-to-face vs. virtual interactions
- anonymous vs. identified information
- sharing vs. appropriating knowledge

Individual preferences and different levels of organisational acceptance of mobile technology can be better understood by looking at professional bodies' and host organisations' policies and guidelines (what is said about the use of mobile technology), observing and enquiring about informal etiquettes, likes and dislikes (how is mobile technology actually used). From these sayings and doings, students can determine how they can and want to use mobile technology professionally and safely on a particular WPL placement.

The following table can help promote the professional and safe use of mobile technologies.<sup>7</sup> Students can use this table to unpack the complex layers of explicit and latent uses of PMDs in a host organisation.

<b>Domains</b>	<b>Policies and guidelines</b>	<b>Actual use</b>
<b>Discipline / Professional body</b>		
<b>Workplace</b>		
<b>Patients/Clients</b>		
<b>Workplace educator/supervisor</b>		

<sup>7</sup> West, M., & Vosloo, S. (2013). UNESCO policy guidelines for mobile learning. Paris: UNESCO.

<b>Personal</b>		
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### **Considering safe use of device and content**

The safe use of PMDs includes being aware of what you share publicly online, as this might have privacy and confidentiality issues, but also how you use your device(s).

The following recommendations can be provided to students.

#### **Safe use of devices:**

- When not in use, keep your device locked.
- To protect against the loss of your device, install a device finder or manager (like [Find My iPhone](#) or [Android Device Manager](#) for mobile phones).
- To protect your device from viruses, install Operating System updates and update your apps daily.

#### **Safe online information and content:**

- Protect your personal and sensitive information by using strong passwords or remove or encrypt confidential information.
- Before you publicly post, think about your audience and the potential impact on others and your digital footprint.
- Review your posts for appropriateness before making them public.
- When using public WiFi you might be divulging more information than you think so be aware of the sites you are accessing and the information that you are uploading. Consider limiting yourself to simple searches or use private browsing.

#### **So to be safe and protect yourself online consider:**

- Being discreet and sharing with care.
- Browsing in private mode.
- Disabling location functions on your devices.
- Checking apps and online privacy settings frequently.
- Using strong passwords (that are longer and include symbols) and not the same for all accounts.
- Using apps from reputable sources.
- Periodically deleting your cookies, cached pages, and history.
- Limiting your personal information stored on devices.

### **GPS for WPL resources**

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [FAQ – Professional conduct](#)
- [FAQ - Privacy, confidentiality and security](#)
- [Privacy, confidentiality, policy & ethics](#)
- [Personal support](#)
- [Appropriate places](#)

- [Formal and informal places](#)
- [During placement](#)
- [Recording and promoting achievements](#)

### **How to identify professional and safe practices?**

As an element of the capacity building framework designed to help students make better use of PMDs for WPL, this specific resource aims to help students better understand the issues of professional and safe use of mobile technology for their learning while on placement.

Most institutions encourage participation in the digital economy and digital citizenship, and support responsible engagement with social media for purposes that enhance professional work and professional development. However, they also seek to prevent employees from unprofessional behaviour and misconduct arising from inappropriate engagement with social media or various (mis)uses of mobile technologies. Students may come across workplace placement hosts that allow the use of PMDs and others that do not allow it. Further, not all workplaces are technology-friendly environments. The use of PMDs may not be deemed suitable in certain professional contexts.

### **How can academics, WPEs and their colleagues help students identify their responsibilities around a professional and safe use of PMDs while on placement?**

With the internet, the professional, educational, public and private spheres are increasingly blurred. The internet can be used for learning, working, playing, socialising etc. Students need to appreciate the benefits and risks of using mobile technology for learning in professional settings. An initial approach to safeguarding against misuse (disruptions, distractions, disclosure, breaches of permission and information, etc.) has often led to the banning of PMDs during working hours altogether, to protect people's rights to privacy<sup>8</sup>, for example.

Institutions are at different stages of appreciating the benefits of using PMDs for work and learning, and therefore, are at different stages of introducing special ethical guidelines or netiquette regarding the use of and access to mobile technology, social media and the internet while at work. These netiquettes mostly focus on personal mobile phone use and e-safety (e.g. online bullying, unsafe sharing of information, identity theft).

Students need to be made aware of such special digital or online communication etiquette. They also need to be made aware of the impact the visible use of mobile devices in professional practice has on their relationships with colleagues and clients/patients.<sup>9</sup>

Therefore: **Students need to be made aware of the need to ask first and understand the privacy and confidentiality policies, as well as be mindful that some people are reluctant or even refuse to be included in videos etc. Clients have the right to decline permission to use PMDs.**

When students intend to use mobile technology, including taking photos, they need to consider carefully the professional and cultural contexts, user preferences, motivations and purposes. They need to think carefully about the tools they use, how they use them and who has access to them. They cannot assume that people have given consent.

## ***Initiating dialogue***

### **Strategic questions for initiating dialogue**

Using strategic questions is an effective way to achieve a shared understanding of the use of PMDs for learning and work on placement. The table below helps raise questions about key issues under specific domains when using mobile technology to enhance WPL experiences. For each domain, consider who might be responsible for initiating and maintaining dialogue, as well as how, where, when (pre, during and/or post-placement), with whom and for what tasks. We also provide sample questions for students to start a dialogue with their WPE. To initiate dialogue requires more than asking an open question; it also requires actively listening to the answers and using follow-up

<sup>8</sup> Fuchs, C. (2011). Towards an Alternative Concept of Privacy. *Journal of Information, Communication and Ethics in Society* 9 (4): 220-237.

<sup>9</sup> Byrne-Davis, L., Dexter, H., Hart, J., Cappelli, T., Byrne, G., Sampson, I., Mooney, J., Lumsden, C. (2015). Just-in-time research: a call to arms for research into mobile technologies in higher education. *Research in Learning Technology*, 23.

questions to expand on and clarify issues. These follow-up questions can happen over the duration of the placement and, thus, ensure an ongoing dialogue between students and WPEs, for example.

Domains	Opening questions
<b>Personal mobile technology use and tasks</b>	What work and/or learning tasks can I complete using my personal mobile device, and when?
<b>Digital literacy skills</b>	Do I need to upgrade my digital literacy skills to complete the negotiated tasks? How can I do this?
<b>Policy and guidelines</b>	What are the general expectations around the use of personal mobile device for learning and work? Where can I find the workplace policies and guidelines about the use of mobile devices and social media?
<b>Personal preferences</b>	Can we discuss how we might be able to communicate with mobile devices?
<b>Workplace culture</b>	What for and how are staff using mobile devices in the workplace?
<b>Ethical conduct</b>	What ethical issues do I need to consider if I use my mobile device on placement?

### GPS for WPL resources

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [Communicating](#)
- [FAQ - Who can I ask for advice?](#)
- [FAQ - How do I connect with my workplace educator?](#)
- [FAQ - "How do I make sense of feedback?"](#)

### Why initiate dialogue about and with mobile technology?

As an element of the capacity building framework designed to help students make better use of PMDs for WPL, this specific resource aims to help students design and initiate dialogue with academic teaching staff and WPEs (WPLEs) to ensure common expectations, and shared learning activities and goals while on placement.

WPL occurs in workplaces. Each discipline, and even each workplace, has their unique ways of working - how employees in workplaces do things, say things, use mobile technology and relate to each other to get things done. Increasingly, workplaces have their own policies around the use of PMDs and social media. On top of that students, academic coordinators and WPEs all bring their own assumptions and expectations about the use and value of PMDs to WPL. These policies and assumptions need to be explicitly discussed in order to reach a shared understanding of how students, WPEs and academics will use PMDs to enhance students' learning.

### How can academics, WPEs and students develop their capacity to discuss and negotiate expectations, skills and value around the use of PMDs and to address cultural issues and power relations as well as work within policies?

Students on placement often experience a range of challenges. Lack of communication and connection are listed as major challenges.<sup>10</sup> More specific examples of these challenges include:

- Feeling and being isolated from home
- Being confronted by cultural barriers
- Being scared to ask questions

<sup>10</sup> Jackson, D. (2014). Employability skill development in work-integrated learning: Barriers and best practice. *Studies in Higher Education*. Doi:10.1080/03075079.2013.842221

- Finding it difficult to establish learning relationships with WPEs
- Being confronted by confusing experiences
- Not knowing what to expect
- Not knowing where to go to find answers
- Not getting (enough) feedback
- Being anxious about not 'performing' well

As these challenges highlight, we cannot assume that students have a smooth transition to WPL. We also cannot take for granted that social interactions take place automatically. Just because people are physically in the same place and allocated to work together does not mean that they have communicated about and addressed these issues. Rather than assuming a shared understanding, it is safer to discuss these challenges. Also, be mindful not to restrict social interaction to educational interventions aimed at cognitive processes, to the detriment of socio-emotional processes.

Successful placements need, amongst other things, clear, robust and shared understanding around coordination and communication with and between students, academics and WPEs.<sup>11</sup> In addition to this, beyond placements, learning and decision-making, in general, requires dialogue.<sup>12</sup> Indeed, research has shown that collective, reciprocal, cumulative, supportive and purposeful dialogues “can improve student perceptions of learning environments”.<sup>13</sup>

West & Vosloo<sup>14</sup> recommended the use of dialogue (as well as advocacy and leadership) to raise awareness of mobile learning. Coulby, Hennessey, Davies & Fuller argued, as did Wenger, that “[t]he introduction of a new device for learning into the community of practice facilitated an opportunity for staff and students to open a dialogue and further develop shared meaning and experience”.<sup>15</sup> As such, the use of mobile technologies can create a community of practice.<sup>16</sup>

Dialogue should be conducted amongst and between the following people:

- students
- peers
- academics
- WPEs
- professionals
- assessors

Mobile technology can be a useful communication tool to:

- connect, motivate and enhance relational aspects of learning and social interactivity<sup>17</sup>;
- support “the interchange between explicit and tacit knowledge”<sup>18</sup>; and
- foster the development of collaborative and cooperative learning situations in powerful integrated electronic environments.<sup>19</sup>

<sup>11</sup> Howard, C., Fox, A. R., & Coyer, F. (2014). Text messaging to support off-campus clinical nursing facilitators: A descriptive study. *Nurse Education Today*. Doi:10.1016/j.nedt.2013.12.011

<sup>12</sup> Kreijns, K., Kirschner, P., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research. *Computers in Human Behavior* 19, 335-353.

Hardyman, W., Bullock, A., Brown, A., Carter-Ingram, S., & Stacey, M. (2013). Mobile technology supporting trainee doctors' workplace learning and patient care: An evaluation. *BMC medical education*, 13(1), 1-10.

<sup>13</sup> Simpson, A. (2015). Designing pedagogic strategies for dialogic learning in higher education. *Technology, Pedagogy and Education*(ahead-of-print), 1-17 (p. 15).

<sup>14</sup> West, M., & Vosloo, S. (2013). UNESCO policy guidelines for mobile learning. Paris: UNESCO.

<sup>15</sup> Coulby, C., Hennessey, S., Davies, N., & Fuller, R. (2011). The use of mobile technology for work-based assessment: The student experience. *British Journal of Educational Technology*, 42(2), 251-265 (p. 259).

<sup>16</sup> Holley, D., & Sentance, S. (2015). Mobile 'Comfort' Zones: Overcoming Barriers to Enable Facilitated Learning in the Workplace. *Journal of Interactive Media in Education*, 2015(1).

<sup>17</sup> Mettiäinen, S. (2015). Electronic Assessment and Feedback Tool in Supervision of Nursing Students During Clinical Training. *Electronic Journal of e-Learning*, 13(1).

Hardyman, W., Bullock, A., Brown, A., Carter-Ingram, S., & Stacey, M. (2013). Mobile technology supporting trainee doctors' workplace learning and patient care: An evaluation. *BMC medical education*, 13(1), 1-10.

Howard, C., Fox, A. R., & Coyer, F. (2014). Text messaging to support off-campus clinical nursing facilitators: A descriptive study. *Nurse Education Today*. Doi:10.1016/j.nedt.2013.12.011

<sup>18</sup> Hardyman, W., Bullock, A., Brown, A., Carter-Ingram, S., & Stacey, M. (2013). Mobile technology supporting trainee doctors' workplace learning and patient care: An evaluation. *BMC medical education*, 13(1), 1-10.

Kirschner [10] argues that the future of learning is based on a shared meaning-making design. Mobile technology can also be the conversation starter to “augment these discussions by preparing trainees so that they can have a more informed, more confident and potentially more efficient discussion”.<sup>20</sup> However, online dialogues should not be simply seen as a replacement for face-to-face interactions. Asynchronous technology-mediated contributions often lead to monologues rather than dialogue.<sup>21</sup> Also, in practice, there are many obstacles and challenges to students actually using their personal digital devices while on placement. For example, there are cultural and professional biases against the use of mobile devices or a lack of shared expectation.

Therefore: **Before placements, students could start a conversation with their WPEs about expectations, perceived barriers and opportunities for using their PMDs for learning. We propose that this process can be initiated, fostered and structured around a series of questions in key domains.**

### ***Establishing networking activities***

#### **Networking guiding questions**

To help students identify networking opportunities to help them make the best use of mobile technology for WPL, as well as whether to create new or access existing online networks, consider the questions in the following table:

Questions	Examples
What kind of challenge are you facing?	Personal isolation, lack of confidence, limited opportunities for professional growth, etc.
What kinds of connections or relationships would help you to enrich your WPL experiences?	With family, with friends, with peers, with mentors, with experts, with academics, etc.
What kinds of engagement and activities would benefit you?	Social support, practical advice, mentorship, companionship, feedback, access to information, collaborative work, etc.
What kinds of existing relevant networks and communities do you know?	Facebook, university platforms, Twitter, LinkedIn, etc.
What kind of online community features are important for you?	Privacy, membership, types of tasks, online presence, etc.
How will you monitor your success?	Frequency of accessing a network; benefits gained from networks

#### **Networking platforms to enhance learning**

The table below should be seen as a prompt to help students start building networks to enhance their WPL experience while on placement using mobile technology. It highlights a range of tools to build an online network to share experiences, ask questions, learn from others and share links or other information. Of course, there will be more issues, different foci and more up to date network types than listed here. The examples in the table below are provided as triggers to help you adapt and complete it.

Issues	Focus	Networks and opportunities
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<sup>19</sup> Kirschner, P. (2001). Using integrated electronic environments for collaborative teaching/learning. *Research Dialogue in Learning & Instruction* 2, 1-9.

<sup>20</sup> Hardyman, W., Bullock, A., Brown, A., Carter-Ingram, S., & Stacey, M. (2013). Mobile technology supporting trainee doctors' workplace learning and patient care: An evaluation. *BMC medical education*, 13(1), 1-10 (p. 8).

<sup>21</sup> Kreijns, K., Kirschner, P., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research. *Computers in Human Behavior* 19, 335-353.

<b>Support</b> (e.g. knowledge access, technical access)	e.g. Social media policies, apps	e.g. University web portals, WPL related blogs, University or workplace DIT
<b>Feedback</b> (e.g. debriefing, reflecting, receiving and giving feedback from academics, students, WPEs)	e.g. Performance, assessment, communication	e.g. university learning management systems, subject online forum, WPL related blogs
<b>Advice</b> (e.g. seeking from outside practitioners)	e.g. Professional knowledge, experience and skills	e.g. Facebook groups, LinkedIn groups, Twitter lists, xMOOCs and cMOOCs
<b>Ethics</b> (e.g. discipline-specific, organisational, etc.)	e.g. Privacy, confidentiality	e.g. University subject online forum, Open online Forum, Yammer networks, YouTube Channels

### How to build a networked community

If an online network or community does not exist, consider creating your own community or initiating a network.

For tips on how to build an online community go to <https://www.feverbee.com/how-to-build-an-online-community/>

To use Online Community Builder's Purpose Checklist go to <http://www.fullcirc.com/community/purposecheck.htm>.

If you do not know about online communities, you can read about them at <https://gps4wpl.wordpress.com/networking/>.

### GPS for WPL resources

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [Networking](#)
- [Learning with others](#)
- [Reflecting with others](#)
- [Digital literacies](#)
- [Digital presence](#)
- [Recording and promoting achievements](#)
- [7 steps to using social media to connect with and learn from people in your discipline](#)
- [Linking up and stepping out with LinkedIn](#)

### How to build and participate in professional online networks?

As an element of the capacity building framework designed to help students make better use of their PMDs for WPL, this specific resource aims to help students, academic teaching staff and WPEs provide a virtual space for all to connect with relevant people to enable timely collaboration and feedback for learning.

Establishing networking tasks can be seen as an opportunity to and develop more generic skills to create and participate in professional learning networks and communities. Mobile technology can enable learning with a connected network.

## **How can students become more skilful at using PMDs to build and participate in professional online networks and stay engaged with their learning while on placement?**

Although students may have access to a WPEs on site, this person may be supervising several students, or may need to attend to other duties, and is, therefore, often not physically present. This might be an issue for students, especially at times when they may have questions or need support. This can lead to self-doubt, lack of access to discipline knowledge, loss of confidence or motivation to perform, difficulty making sense of their learning experience in isolation, etc.

Due to being geographically removed from their personal and academic support networks and usual learning spaces, students report feeling isolated, unsupported and stressed.<sup>22</sup> Students also experience difficulty in transitioning to placements and not knowing what to do when feeling upset or anxious.<sup>23</sup>

These WPL challenges highlight that students cannot learn in isolation in the workplace and instead need to be actively engaged and integrated into a community of practice<sup>24</sup> comprised of academic, professionals, peers and social support.<sup>25</sup>

In their pilot implementation study on the use of mobile technology to support WPL experiences, Dearnley *et al.*<sup>26</sup> found that “students really valued the social networking while isolated on remote practice placements”. The use of mobile technology in WPL has the potential to enable a networked, collaborative, integrative learning experience. Characteristics of networked communities are that they can grow and that everybody can have a voice, share experiences and give advice across settings. Mobile technologies offer solutions to feelings of isolation while on placement as it can provide opportunities for staying connected, establishing mentoring and peer support systems, and providing students with enabling, personalisable tools and resources.<sup>27</sup> Further, through the use of virtual spaces, students can draw on personal, peer and professional networks.

Therefore: **Students can be given scaffolded learning tasks to participate in and create online networks using mobile technology to engage with peers, academic staff or other professional practitioners to learn and work.**

## **Creating learning activities on-the-go**

### **Problem-solving approach to identifying learning opportunities with mobile technology**

To help students identify learning opportunities with mobile technology, their WPL tasks could be scaffolded as described in the table below to:

- address the opportunity to collaborate with peers across settings;
- identify common or shared problems; and/or
- reduce the feeling of isolation through connected collaboration.

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<sup>22</sup> Gracia, L. (2010). Accounting Students' Expectations and Transition Experiences of Supervised Work Experience. *Accounting Education: An International Journal*, 19(1-2), 51-64.

Howard, C., Fox, A. R., & Coyer, F. (2014). Text messaging to support off-campus clinical nursing facilitators: A descriptive study. *Nurse Education Today*. Doi:10.1016/j.nedt.2013.12.011.

Mackay, B., & Harding, T. (2009). M-Support: keeping in touch on placement in primary health care settings. *Nursing praxis in New Zealand*, 25(2), 30-40.

<sup>23</sup> Robinson, A., Abbey, J., Abbey, B., Toye, C., & Barnes, L. (2009). Getting off to a good start? A multi-site study of orienting student nurses during aged care clinical placements. *Nurse Education in Practice*, 9, 53-60.

<sup>24</sup> Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

<sup>25</sup> Carvalho, L. & Goodyear, P. (Eds.) (2014). *The architecture of productive learning networks*, New York, Routledge.

<sup>26</sup> Dearnley, C., Taylor, J., Hennessy, S., Parks, M., Coates, C., Haigh, J., Fairhall, J., Riley, K., & Dransfield, M. (2009). Using Mobile Technologies for Assessment and Learning in Practice Settings: Outcomes of Five Case Studies. *International Journal on E-Learning*, 8(2), 193-207.

<sup>27</sup> George, L. E., Davidson, L. J., Serapiglia, C. P., Barla, S., & Thotakura, A. (2010). Technology in Nursing Education: A Study of PDA Use by Students. *Journal of Professional Nursing*, 26(6), 371-376.

Mackay, B., & Harding, T. (2009). M-Support: keeping in touch on placement in primary health care settings. *Nursing praxis in New Zealand*, 25(2), 30-40.

Stage	Activity
<b>Description of a WPL problem</b>	<ul style="list-style-type: none"> <li>• “Establishing what the problem is” (p.14)</li> <li>• Precisely understanding the problem and its constraints to allow for the development of more exact solutions.</li> <li>• Example: students discuss and articulate why [X] aspect of mobile technology use in the workplace is important.</li> </ul>
<b>Research</b>	<ul style="list-style-type: none"> <li>• “Collecting background information” (p.18)</li> <li>• Reviewing relevant information (e.g. history of the problem), end-user research and identification of potential constraints.</li> </ul>
<b>Formation of ideas</b>	<ul style="list-style-type: none"> <li>• “Creating potential solutions” (p.20)</li> <li>• Generating ideas to meet user needs.</li> </ul>
<b>Creation of a prototype</b>	<ul style="list-style-type: none"> <li>• “Resolving solutions” (p.22)</li> <li>• Generating ideas and development of prototypes that can be presented to user groups and stakeholders for review.</li> <li>• Example: in this stage students could work on a prototype of a learning resource on [X] that will be presented to their peers as future users of their resource.</li> </ul>
<b>Selection</b>	<ul style="list-style-type: none"> <li>• “Making choices” (p.24)</li> <li>• Reviewing proposed solutions against the design objective.</li> <li>• Example: this stage could be implemented after presenting the prototype to peer-students and receiving feedback.</li> </ul>
<b>Implementation</b>	<ul style="list-style-type: none"> <li>• “Delivering the solution to the design brief” (p.26)</li> <li>• Finalising and implementing the resource by student(s) author of the resource and/or peers.</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• “Obtaining feedback” (p.28)</li> <li>• Identify improvements for the future based on feedback and evaluation of the resource.</li> </ul>

The stages and activities in this table draw on Ambrose & Harris<sup>28</sup> prototypical stages of design thinking. They present a generic design thinking process that could be applied to large/complex co-design tasks. It may need to be simplified for smaller tasks and/or adapted for specific media or task design (e.g. creating a resource using [Scoop.it](#)).

### GPS for WPL resources

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [Organising your studies](#)
- [FAQ - Who can I learn with while on placement?](#)
- [During placement](#)

### How to use mobile technology to seize learning opportunities as they emerge?

As an element of the capacity building framework designed to help students make better use of their PMDs for WPL, this specific resource aims to promote students' agency and capacities to use mobile technology to create their own resources and tools to enhance their learning on-the-go.

### How can students, academics and WPEs use mobile technology help them respond to practice issues as they emerge?

The workplace can be an excellent rewarding source of learning as long as it is perceived by students as a rich learning environment.<sup>29</sup> To make the most of WPL experiences, students need to engage

<sup>28</sup> Ambrose, G., & Harris, P. (2010). *Basics Design 08: Design Thinking*. Lausanne, Switzerland: AVA Publishing SA, pp.12-28.

<sup>29</sup> Boud, D. & Prosser, M. (2002) Appraising New Technologies for Learning: A Framework for Development, *Educational Media International*, 39:3-4, 237-245

with the environment and practise taking initiative. Students can come across unanticipated or unique situations in their workplace. Feeling alone in addressing these emerging issues can be isolating and stressful. Not knowing what to do with a problem can reduce confidence and sense of agency.<sup>30</sup>

Active involvement and participation in work activities on placement are known to help students learn. This equally applies to learning digital skills. Teaching students to use information and communication technology (ICT) and developing their digital literacy skills in isolation from professional practice as well as telling them about policies and professional codes of conduct out of context run the risk of students becoming passive receivers rather than agentic learners. To enhance learning, students need to be encouraged to become participatory, creative and self-directed learners.

Evidence shows that learning to use ICT in isolation from specific professional problems is often ineffective.<sup>31</sup> Students are likely to face similar issues when learning to use mobile technologies. For example, pre-service teachers or health practitioners need to know how to operate a Smartphone, an iPad or other mobile devices, but they also need to know how to fuse the use of these devices with professional needs (ways of knowing, doing and relating). In short, future professionals need to have the appropriate knowledge, skills and disposition to efficiently, effectively and ethically use mobile technologies at work and for WPL. Further, evidence shows that 'pure' resources developed by others that aim to enhance the use of technologies in the workplace (such as eLearning resources developed for teachers) are often ineffective as they lack authenticity and personal engagement.<sup>32</sup>

Quite a different issue is encountered in courses where students are provided with large amounts of information. In such cases, students usually are engaged in passive learning (e.g. reading, note taking, doing quizzes). In contrast, evidence from cognitive sciences suggests<sup>33</sup> that active, constructive and interactive activities are much more beneficial than being passive".<sup>34</sup> Being active is good, being constructive is even better and being interactive promises optimal ways for creating self-owned learning opportunities. Tasks that draw on active students' construction of learning resources and tools for their own learning and their peers could help address this challenge. These tasks not only help address the above two issues, but also could help foster students' creativity, innovation and agency.<sup>35</sup>

Examples of participatory co-creation approaches include:

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<sup>30</sup> Hitlin, S., & Elder, G. H. (2007). Time, Self, and the Curiously Abstract Concept of Agency\*. [to be reviewed]. *Sociological Theory*, 25(2), 170-191. doi: 10.1111/j.1467-9558.2007.00303.x

<sup>31</sup> Angeli, C., & Valanides, N. (2009). Epistemological and methodological issues for the conceptualization, development, and assessment of ICT-TPCK: advances in technological pedagogical content knowledge (TPCK). *Computers & Education*, 52, 154-168.

Angeli, C., & Valanides, N. (2013). Technology mapping: an approach for developing technological pedagogical content knowledge. *Journal of Educational Computing Research*, 48(2), 199-221. doi: 10.2190/EC.48.2.e

Koehler, M. J., & Mishra, P. (2005). What happens when teachers design educational technology? The development of technological pedagogical content knowledge? *Journal of Educational Computing Research*, 32(2), 131-152.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: a framework for integrating technology in teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.

Mishra, P., & Koehler, M. J. (2007). Technological pedagogical content knowledge (TPCK): confronting the wicked problems of teaching with technology. In R. Carlsen, K. McFerrin, J. Price, R. Weber & D. Willis (Eds.), *Proceedings of Society for Information Technology and Teacher Education International conference, 26 March 2007* (pp. 2214-2226). Chesapeake, VA: Association for the Advancement of Computing in Education (ACE). Retrieved 08-01-2016 from: <http://www.editlib.org/p/24919>

<sup>32</sup> Falconer, I., & Littlejohn, A. (2009). Representing models of practice. In L. Lockyer, S. Bennet, S. Agostinho & B. Harper (Eds.), *Handbook of Research on Learning Design and Learning Objects* (pp. 20-40). Hershey: Idea Group.

Littlejohn, A., Falconer, I., & McGill, L. (2008). Characterising effective eLearning resources. *Computers & Education*, 50(3), 757-771.

<sup>33</sup> Chi, M. T. H. (2009). Active-Constructive-Interactive: A Conceptual Framework for Differentiating Learning Activities. *Topics in Cognitive Science*, 1(1), 73-105. doi: 10.1111/j.1756-8765.2008.01005.x

Chi, M. T. H., & Wylie, R. (2014). The ICAP Framework: Linking Cognitive Engagement to Active Learning Outcomes. *Educational Psychologist*, 49(4), 219-243. doi: 10.1080/00461520.2014.965823

<sup>34</sup> Chi, M. T. H. (2009). Active-Constructive-Interactive: A Conceptual Framework for Differentiating Learning Activities. *Topics in Cognitive Science*, 1(1), 73-105. doi: 10.1111/j.1756-8765.2008.01005.x

<sup>35</sup> Damsa, C. I., Kirschner, P. A., Andriessen, J. E. B., Erkens, G., & Sins, P. H. M. (2010). Shared Epistemic Agency: An Empirical Study of an Emergent Construct. *Journal of the Learning Sciences*, 19(2), 143 – 186.

- “knowledge-creating inquiry”<sup>36</sup>
- “knowledge building”<sup>37</sup>
- “[design as inquiry](#)”
- “learning-by-design”<sup>38</sup>

Therefore: **Students should be encouraged to share their resources using mobile technologies to help them (and their peers) learn on-the-go while on placement as well as be assigned tasks to develop learning tools and resources that assist them in using PMDs more skillfully and knowledgeably on placements.**

## ***Deepening reflection***

### **Selecting the appropriate mobile technology functions for reflection**

Students need to reflect at deeper levels and move from reporting on their practice to reflecting on what they did for their WPL. Helping them articulate their reasoning and better understand why they have done what they have on placement and rethink how they could improve on their actions, can be done using mobile technology.

Though students need to be selective about what they share through a blog, university online forums, their own established online learning group, in social media network groups etc., following are some examples that can help plan reflective practice. Students can take notes using an electronic logbook, record their thoughts with a voice recorder or take photographs. They can then review their notes by focusing on points that need clarifying or things that need to be improved. They can also choose to share their reflection with peers, experts, academic teaching staff or staff on placement, other practitioners across settings or a combination of these. They can then go online and pose purposeful reflective questions to their online learning network.

The following table can help students choose from the many affordances of mobile technology to structure reflecting on practice experiences. An example is provided to illustrate how the table can be used.

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<sup>36</sup> Muukkonen, H., & Lakkala, M. (2009). Exploring metaskills of knowledge-creating inquiry in higher education. *International Journal of Computer-Supported Collaborative Learning*, 4(2), 187-211. doi: 10.1007/s11412-009-9063-y

Muukkonen, H., Lakkala, M., & Hakkarainen, K. (2005). Technology-Mediation and Tutoring: How Do They Shape Progressive Inquiry Discourse? *Journal of the Learning Sciences*, 14(4), 527-565. doi: 10.1207/s15327809jls1404\_3

<sup>37</sup> Scardamalia, M., & Bereiter, C. (2006). Knowledge building: theory, pedagogy and technology. In K. Sawyer (Ed.), *Cambridge Handbook of the Learning Sciences* (pp. 97-115). Cambridge: Cambridge University Press.

<sup>38</sup> Kolodner, J. L., Camp, P. J., Crismond, D., Fasse, B., Gray, J., Holbrook, J., .. Ryan, M. (2003). Problem-Based Learning Meets Case-Based Reasoning in the Middle-School Science Classroom: Putting Learning by Design(tm) Into Practice. *Journal of the Learning Sciences*, 12(4), 495-547. doi: 10.1207/s15327809jls1204\_2

Valtonen, T., Kukkonen, J., Kontkanen, S., Sormunen, K., Dillon, P., & Sointu, E. (2015). The impact of authentic learning experiences with ICT on pre-service teachers' intentions to use ICT for teaching and learning. *Computers & Education*, 81, 49-58. doi: <http://dx.doi.org/10.1016/j.compedu.2014.09.008>

Reflective tasks	Resources			
	When	Who	How	Mobile technology hardware/function/software
Reviewing the day's activities	At the end of the day after placement	Peer	Online	Skype
Etc.				

### GPS for WPL resources

For more relevant bite size information, tasks and further reading, refer students to the following links in the [GPS for WPL](#), an online resource for students to navigate the WPL landscape with mobile technology:

- [Reflecting](#)
- [Learning on your own](#)
- [Learning with others](#)
- [Sharing](#)
- [Feedback](#)
- [Assessing](#)
- [After placement](#)

### Why use mobile technology to enhance students' reflection on practice?

As an element of the capacity building framework designed to help students make better use of their PMDs in WPL, this resource aims more specifically to help academic teaching staff, WPEs and students integrate reflective practices during and after placement.

Dewey wrote, "We do not learn from experience. We learn from reflecting on experience".<sup>39</sup> Reflection is, thus, essential to learning and it needs purpose and intention. Further, research shows<sup>40</sup> that reflection is what is required for 'good' WPL and for students to 'feel' work-ready.<sup>41</sup>

<sup>39</sup> Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educational process*. Lexington, MA: Heath (p. 78).

<sup>40</sup> Billett, S. (2009). Realising the educational worth of integrating work experiences in higher education. *Studies in Higher Education*, 34(7), 827-843.

Dyson, L. E., Litchfield, A., Lawrence, E., Raban, R., & Leijdekkers, P. (2009). Advancing the m-learning research agenda for active, experiential learning: Four case studies. *Australasian Journal of Educational Technology*, 25(2), 250-267.

Guggi, N., & Glover, R. (2012). *Digital literacies for student employability: Spotlight on work placements*. Paper presented at the T & L Showcase: Assessing work placements, Reading, UK. [https://www.reading.ac.uk/web/FILES/cdot/NGuggi\\_RGlover.pdf](https://www.reading.ac.uk/web/FILES/cdot/NGuggi_RGlover.pdf)

## How can mobile technology enhance students' reflection on their WPL experiences in order to be better prepared for their future practice?

Although there are opportunities for shared reflection on placement, we also know that at times, there is limited capacity by practitioners due to time and skills to enable students to reflect deeply on their performances on placement. Having to rely on WPEs to facilitate and/or support students' reflection can be problematic as most WPEs' primary role is to be a practitioner. In addition to this, often, they are not trained to facilitate learning through reflection.<sup>42</sup> There is a risk that many opportunities to learn from reflecting on experiences can be missed. But just asking students to use their PMDs for reflection - just like simply exposing them to practice experiences - is not enough. Students need to be guided to use PMDs effectively to reflect by themselves and with others.

Learning to reflect on practice experiences online with others helps students to accept self-responsibility and grow their practice authority.<sup>43</sup> However, as Strandell-Laine *et al.* found in their study on students' use of mobile devices during nursing clinical placements, "Participants used mobile devices primarily as reference tools, but less frequently as tools for reflection, assessment or cooperation during the clinical practicum".<sup>44</sup>

Though students value their pre-placement preparation for reflection, once in the workplace, they often report relying on prompts from the WPEs to reflect. They also report feeling more comfortable reflecting with their WPEs about technical and procedural aspects of work and less comfortable to discuss ethical, cultural and emotional issues.<sup>45</sup> There is a tendency for students to avoid asking questions out of fear of showing their lack of knowledge or challenging their WPEs.[7] Yet, shying away from asking sensitive questions about what they have seen and done beyond technical and procedural aspects of practice, limits students' depth of reflection.

For Ryan and Ryan<sup>46</sup> there is a hierarchy of reflection (the 4Rs) with at its base reporting and responding; in the middle relating to personal experiences, and reasoning; and at the top, reconstructing. For Harvey *et al.* reflection can range from superficial to deep and leads to a spectrum of outcomes from pragmatic implications and change, that touch on our routine practice, to more essentialist implications and change, that affect our understanding of how we learn, know and act. In this context, critical reflection "may lead to multiple learnings including transformative learning".<sup>47</sup>

Critical thinking is the kind of reflection that helps students problematise practice and theory, makes situated and contextual dimension of practice more explicit, question the relationships between technical, historical and cultural practices and connects action with reflection. "Critical thinking within critical theory means thinking autonomously as well as with others, without allowing others to think for us. It means questioning the traditions and motivations that shape practices in the first instance, and then participating in shaping other possibilities for future practices".<sup>48</sup>

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Taylor, J. D., Dearnley, C. A., Laxton, J. C., Coates, C. A., Treasure-Jones, T., Campbell, R., & Hall, I. (2010). Developing a mobile learning solution for health and social care practice. *Distance Education*, 31(2), 175-192. doi: 10.1080/01587919.2010.503343

<sup>41</sup> Ferns, S., Russell, L., & Smith, C. (2015). *Learning for Life and Work in a Complex World*. Paper presented at the 38th HERDSA Annual International Conference, Melbourne Convention and Exhibition Centre.

[http://www.herdsa.org.au/wp-content/uploads/conference/2015/HERDSA\\_2015\\_Ferns.pdf](http://www.herdsa.org.au/wp-content/uploads/conference/2015/HERDSA_2015_Ferns.pdf)

<sup>42</sup> Trede, F., & Smith, M. (2012). Teaching reflective practice in practice settings: students' perceptions of their clinical educators. *Teaching in Higher Education*, 17(5), 615-628. doi:10.1080/13562517.2012.658558

<sup>43</sup> Ross, J. 2011. Traces of self: Online reflective practices and performances in higher education. *Teaching in Higher Education* 16, pp. 113-26.

<sup>44</sup> Strandell-Laine, C., Stolt, M., Leino-Kilpi, H., & Saarikoski, M. (2015). Use of mobile devices in nursing student-nurse teacher cooperation during the clinical practicum: An integrative review. *Nurse Education Today*, 35(3), 493-499. doi: <http://dx.doi.org/10.1016/j.nedt.2014.10.007> (p. 493).

<sup>45</sup> Trede, F., & Smith, M. (2012). Teaching reflective practice in practice settings: students' perceptions of their clinical educators. *Teaching in Higher Education*, 17(5), 615-628. doi:10.1080/13562517.2012.658558

<sup>46</sup> Ryan, M., & Ryan, M. (2013). Theorising a model for teaching and assessing reflective learning in higher education. *Higher Education Research and Development*, 32(2), 244-257. doi: <http://dx.doi.org/10.1080/07294360.2012.661704>

<sup>47</sup> Harvey, M., Coulson, D., & McMaugh, A. (2016). Towards a theory of the Ecology of Reflection: Reflective practice for experiential learning in higher education. *Journal of University Teaching & Learning Practice*, 13(2) (p. 5).

<sup>48</sup> Trede, F., & McEwen, C. (2015). Critical Thinking for Future Practice: Learning to Question. In *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 457-474). Palgrave Macmillan US.

Deep reflection is an essential process for students to make sense of the complexity of professional practice. “When we engage in reflection, it becomes much easier to make sense of our personal and professional worlds and how we operate within them; things become clearer”.<sup>49</sup> This kind of reflection requires “purposefully thinking about what you have done and what you are going to do next”.<sup>50</sup>

Therefore: **PMDs, as bridging objects, can be most useful in facilitating reflection to gain deeper insights and ideas for future actions. Academics and WPEs need to provide scaffolded tasks using the many affordances of mobile technology to help students reflect o and integrate their experiences using their PMDs while on placement should be planned.**

It is essential, though, that students are vigilant and selective, though, to stay professional when sharing experiences. They need to follow policies, privacy rules and ask for the appropriate permission from anyone who is the subject of the reflections.

### ***Considering issues of time and place***

#### **When to use personal mobile device or face-to-face**

The following table can be used to help students consider when it is most appropriate to use a mobile device or face-to-face (co-presence) to address or anticipate a particular situation while on WPL placement.

For example:

- “I feel distressed about something I have seen or experienced on placement and need to talk to someone about it urgently, but my supervisor is not available right now” can be categorised as high priority for immediacy, entwined and sensitive issues, thus requiring a face-to-face interaction.
- “I need to get feedback by the end of the week on the WPL experience I have documented” can be categorised as asynchronous, medium priority, not urgent and non-verbal, therefore only requiring a technology-mediated interaction.
- “I feel isolated in my learning or my placement experience” can be categorised as high priority time, synchronous at a distance, which can, therefore, be addressed initially by using mobile technology to connect to people via existing social and/or professional networks.

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<sup>49</sup> Hensley, P. A., & Burmeister, L. (2009). Leadership Connectors: Six Keys to Developing Relationship in Schools. Eye on Education. 6 Depot Way West Suite 106, Larchmont, NY 10538 (p. 102).

<sup>50</sup> Hensley, P. A., & Burmeister, L. (2009). Leadership Connectors: Six Keys to Developing Relationship in Schools. Eye on Education. 6 Depot Way West Suite 106, Larchmont, NY 10538 (p. 102).



In the context of university education, the use of mobile technology for learning “challenges the need for buildings and campuses and makes us question the need for education to take place at fixed physical locations; it challenges the need for timetables and makes us question the need for synchronicity; it challenges the need for lectures and seminars and makes us question the essence of face-to-face teaching and learning”.<sup>51</sup> In the context of WPL, the use of mobile technology invites us to rethink the triadic relationship between students, WPEs and the need for teachers to be with students in the same time and place.

### **How to help students, academics and WPEs choose between co-presence and mobile technology-mediated learning and interactions?**

‘Time’ and ‘place’ are not neutral concepts, but social constructs and that we need to be wary of discourses that promote the idea that the use of “[digital] technology can set learning free of spatio-temporal constraints”.<sup>52</sup> Professional practice is context-dependent and traditionally time and place defined situated practices and WPL. However, with mobile technology, the way we learn and practise is changing.

Many authors argue that because mobile technology accompanies people on the move it can facilitate learning across time and places.<sup>53</sup> Through the use of mobile technology, the geographical distance between the university and workplace placement can be bridged. This raises many questions about temporal and spatial conditions for learning and work in terms of how we relate to self and others, in general, and around the distinction between distance and proximity, in particular.

Mobile technology is a boundary object; it is an artefact that fulfils a bridging function. As such it allows boundary crossing and can help transform space and time.<sup>54</sup> Its use not only helps blur the boundaries of learning spaces between the ‘now’ and ‘then’, but also between professional and personal. Mobile technology can be most useful for students to bridge university and workplaces, especially when they go on placement far from campus or on long placements. They can then use their PMDs to stay connected with academics, exchange ideas with peers and/or support each other from a distance.

Though the use of mobile technology can enhance and deepen students’ learning experience within interactive and networked environments, some situations in WPL require synchronicity of time and place, physical and temporal co-presence between students and WPEs or academic. There are situations during placements where place, situatedness and context are crucial, whereas there are situations where ‘place’ is less important. For example, for academics, the issue might be about checking-in students, whether to visit them on site or simply organise a Skype meeting. For the WPEs, it might be about how to be there for and with students and help them distinguish between the decisions that need to be made in a split second as opposed to the ones that require slow consultation or deep reflection. For students, it might be about understanding when discussions and/or reflection on situated practice experiences can be done away from the place where it happened.

In these instances, the deciding factors are whether ‘thick’ information (e.g. body language, gesture and silence) information is required, whether the situation requires shared time and place, mediation away from the workplace (for example “to allow ‘risky’ requests to be made without losing face”<sup>55</sup>; and/or identifying and shifting between topics to ‘loosely’ (i.e. accidental, no script) arrive at a shared understanding of what is needed in terms of processes and outcomes.

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<sup>51</sup> Kukulska-Hulme, A., & Traxler, J. (2005). Mobile teaching and learning. In A. Kukulska-Hulme & J. Traxler (Eds.), *Mobile learning-a handbook for educators and trainers* (pp. 25-44). London: Routledge (p. 42)

<sup>52</sup> Goodyear, P. (2006). Technology and the articulation of vocational and academic interests: Reflections on time, space and e-learning. *Studies in Continuing Education*, 28(2), 83-98. doi: 10.1080/01580370600750973 (p. 85).

<sup>53</sup> Sharples, M., Taylor, J., & Vavoula, G. (2005). *Towards a theory of mobile learning*. Paper presented at the mLearn 2005 – 4th World conference on mLearning: Mobile technology: The future of learning in your hands, Cape Town, South Africa.

Traxler, J. & Kukulska-Hulme, A (2016). Introduction to the next generation of mobile learning. In Traxler, J. & A. Kukulska-Hulme (Eds.), *Mobile learning: The next generation*, (pp. 1-10). London: Routledge.

<sup>54</sup> Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of educational research*, 81(2), 132-169.

<sup>55</sup> Goodyear, P. (2006). Technology and the articulation of vocational and academic interests: Reflections on time, space and e-learning. *Studies in Continuing Education*, 28(2), 83-98. doi: 10.1080/01580370600750973 (p. 95).

Having said that, it is important for students to conduct a variety of WPL tasks rather than only focus on synchronously or asynchronously as well as in virtual or physical places. This will ensure they experience a fuller range of interactions and are able to decide when mobile technology or co-presence (face-to-face) is the most appropriate way of addressing a situation.

Therefore: **For students to understand when to seek opportunities from co-presence and when to turn to mobile technology for learning, academics and WPEs can help them consider the level of details required to address the issue, such as verbal non-verbal, immediacy, complexity and/or proximity of the information required.**

### ***GPS for WPL***

A [resource](#) to enhance students' WPL through the use of mobile technology. The GPS for WPL is an online resource designed primarily for students to quickly access bite size information, tasks and further reading relevant to the seven themes covered in the Mobile Technology Capacity Building Framework for WPL.

The printable version of the GPS for WPL can be accessed from [its website](#).