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| Hello and welcome to this presentation. My name is Dr. Konstantina Martzoukou, and I'm Associate Professor at the University of Robert Gordon University | 0:00 |
| It is a privilege to present this invited talk today as part of the International  | 0:10 |
| Research Symposium of the National Institute of Library Information Sciences.  | 0:16 |
| Our interdisciplinary research on empowering students' digital literacy skills.  | 0:20 |
| addresses the digital technologies and the ICT theme of the symposium so thank you very much for the invitation,   | 0:25 |
| and I'm delighted to be part of this, connecting with you virtually.   | 0:32 |
| So what is this project about? Digital literacy started as an institutional project back in 2021   | 0:36 |
| And it was led by myself in collaboration with leading teams from six different schools at Robert Gordon University.                                     | 0:43 |
| So the aim of the project was to drive and support the development of digital literacy   | 0:50 |
| skills among our students and in line with UK and global strategic priorities  | 0:56 |
| the project followed different iterations, and as part of this talk, I will discuss the data from the nursing students.                                  | 1:02 |
| And so what we plan to do with this project is open dialogue and conversations around the provision of digital literacy enhancement and support          | 1:12 |
| and the project, to-date has gathered thousands of student data collectively across the different data collection phases of the project.                 | 1:22 |
| So here you can see my collaborator, Dr. Errol Luders, Ms Jane Mair, Mr Neil Johnson and Dr Fiona Work   | 1:34 |
| from the School of Nursing, midwifery and paramedic practice.  | 1:40 |
| And why is this project important for healthcare?  | 1:47 |
| In 2016, the Royal College of Nursing said that every nurse should be an e-nurse   | 1:51 |
| able to use technology to maximum effect.  | 1:56 |

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| For example, supporting personalised real time monitoring and therapeutic care approaches.   | 2:01 |
| But in order to achieve that position, it was important to empower a future workforce with digital skills.   | 2:08 |
| So that was important back then and is equally important today.  | 2:17 |
| With all the advancements that have taken place in technology,   | 2:22 |
| especially with the development of artificial intelligence that we talk a lot about today.   | 2:26 |
| So I thought to start with this infographic because it looked at the everyday life context,  | 2:33 |
| it has been developed by the Good Things Foundation and it addresses the challenges of inequalities created by the digital world.                                | 2:41 |
| So it is really important because we need to place digital inclusion strategies at the heart of higher education,  | 2:52 |
| and our students may be easily found in the wrong side of this digital divide.   | 2:59 |
| For example,   | 3:08 |
| the International Federation of Libraries Associations says that differences in digital skills levels and attitudes often replicate those in society as a whole. | 3:08 |
| So the digital divide for which much the same fault lines as pre-existing, gender, economic, social and education inequalities.                                  | 3:21 |
| So in this infographic, you can see that in everyday life in the UK  | 3:31 |
| one in 14 UK households has no access to the Internet.   | 3:34 |
| 2.5 UK households struggle to afford fixed broadband services.   | 3:40 |
| But also there are more than 5 million people who are digitally excluded.  | 3:45 |
| And there are socioeconomic differences that create these digital divides.   | 3:49 |
| And even at the level of the frontline healthcare professionals and the Good Things Foundation has done some research there,                                     | 3:55 |

and especially in terms of the pandemic, there was a lot of difficulty to cope with healthcare systems and there was an accelerated need  
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for more advanced digital skills to cope overall with this transformation within healthcare.  
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And these digital divides do not only manifest themselves within the everyday life context, but also with the professional context.  
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So moving on from there, we have many different frameworks and projects for the development of digital literacy in health  
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However, overall, incorporating digital skills training to healthcare curricula has generally been slow.  
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In addition, digital skills or capability frameworks usually look at digital healthcare technologies rather than  
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the behavioural and the goal setting and the outcomes and the mindsets around digital skills.  
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And what this means is that different frameworks have been looking at technical proficiency issues.  
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But how we are addressing digital skills in education have mainly focussed on those  
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ICT elements rather than the other dimensions that involve communication,  
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collaboration, participation and ongoing self-development, which are equally important behavioural aspects.  
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So in terms of the aims and objectives of the project,  
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these were the original project objectives and Objective four aimed to develop a number of resources for the upscaling of students,  
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because a lot of the frameworks and the self-assessment,  
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digital literacy skills toolkits that exist out there stop at the level of self-assessment and there was really not much in terms of upskilling.  
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We also did focus groups with different students and at the moment we have different iterations of the survey and we are developing  
6:01

the toolkit to be more discipline based and starting with a focus on health and then possibly moving on to other disciplines as well.

6:12  
Here you can see the main frameworks we used, the European Digital Competencies  
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Framework and also the JISC Digital Capabilities framework. Really these informed  
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the different levels of digital skills that we explore.  
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And I'm going to show you now these skills and then maybe select some examples.  
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Here you can see information literacy is one of them, which is really important for  
developing the ability  
6:43  
to access, evaluate and use healthcare information to support evidence based  
practice,  
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for example and perform clinical activities but also digital research that has to do  
with conducting actual research,  
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using survey tools and organising and interpreting research data.  
7:02  
Beyond those, we've had other areas for example, digital creation and creating  
videos,  
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infographics, posters which are important in terms of health care provision to  
connect with patients and to disseminate health related information effectively,  
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and also digital innovation that has to do with health initiatives, either technology,  
for example,  
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telehealth initiatives, the use of smartphones and health online applications for  
remote consultations.  
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So all of these digital competencies were self-assessed by students using a digital  
competencies scale that had a specific description on it.  
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So it would be more comprehensive for the students.  
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And we used the survey with many, many different students.  
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To-date there have been definitely more than 1000 students who have taken the  
survey.  
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But we're going to report all the results from that reiteration of the survey with the  
nursing students.  
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So we've had students representing different generational categories, as you can see here. 8:24

And this set of results relates to 184 students. 8:30

Since then, we have another 553 students from nursing. 8:35

We're currently analysing this data and we've also added neurodiversity and other digital divide. 8:39

I would say important considerations for example rurality is one of them 8:49

So there will be some very interesting findings from that analysis as well. 8:55

And also in our survey with the nursing students you can see here that most of them were in a blended mode of study because it was 9:00

during the pandemic when we conducted this survey and most of them were the first year. In terms of the courses they studied 9:08

You can see here the majority of them were nursing courses in different areas. 9:18

And also beyond the course, we had 176 UK students and 39 international students from many different countries from Bahrain, Switzerland, 9:23

Denmark, Cameroon, Hungary, Ireland, India, Lithuania, Nigeria, Poland, Russia and many other countries represented. 9:35

So it's quite interesting to see the results, although we didn't really have the balance there in terms of international students, 9:45

So in a future iteration, we will aim to make some cross comparisons there, In terms of higher areas of self-assessed digital competencies 9:52

You can see the main areas there and this is not surprising, especially around the area of digital wellbeing, because this is an area where 10:03

Health and nursing students generally feel very confident in. 10:12

But when it came to the lower areas, it's important to highlight information literacy, the ability to access, evaluate, 10:18

and use healthcare information, which is very important, and that self- assessed at basic level 10:26

As well as digital creation skills, video creation, infographics, data visualisation and analytics.

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Those created many barrier for students because they self-assessed at a very novice, the lowest category of of skills.

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Also digital research skills and digital innovation are really important and crucial for nursing because students should really be aware of digital

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innovations in their area and be champions actually and lead digital initiatives where they go out there to become nursing professionals.

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And so we need to invest more in this kind of education, research and practice.

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But there was also an overarching question about overall digital abilities and overall as a group self-assessed at intermediate level.

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But bear in mind that they were also first year students.

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So in a way, this helped us to understand where the students really perceive themselves and therefore build more

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support for them. We performed some statistical testing in terms of demographic comparisons.

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And you can see here on the basis of younger students, we found that they self-assess higher,

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but also in terms of pre-registration students and they also self-assessed higher than post-registration students so overall we found that younger students

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self-assessed higher but it would be the effect of the feeling that you are more confident that you really are.

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But it wasn't this a consideration in our project because the main purpose was not really to objectively assess the students,

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but to open up conversations and find out why they self-assess in the way they did.

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So we collected some qualitative data as well as you can see here.

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And very interesting that they they learned mainly through trial and error approaches and being self-taught and also within their domain of training.

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It was really informal learning of family environment rather than so much the more formal e-learning approaches there.

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So there is a lot of opportunity to develop this at higher education levels.

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And also there were many qualitative comments that emphasised the importance

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of digital skills development for students in a number of different areas,

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and this really helped us to understand that different digital skills

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And different digital skills help students in different ways.

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For example, students with special needs, emphasised how important it is to have support for the development of these skills.

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And that's why in our new one iteration of the survey, we included neurodivergent students as well,

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Also they emphasised graduate employability, digital collaboration, information literacy and so on.

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And as well as important here is the transferability of digital skills and to be able to understand that,

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you know, all these skills are important for students to address challenges in their academic work,

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but also they reinforce the importance of interacting with others, communication and flexibility and they help them to boost their employability as well.

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This is the paper that we developed. And so have a look if you are interested to find more details about the project.

13:55  
And now I would like to give you an overview of the Digital Competencies Toolkit that we have developed.

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It looks like that's your first recommendation.

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It includes internal and external resources training that will collate and we co-create this with students because it

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is an organic document and obviously knowledge is constantly changing in this domain as well as the training resources.

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And we are planning to develop and have actually developed the first version of this using Articulate,

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because our aim is to develop this as part of the new programme at RGU (Robert Gordon University).

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That's called RGU Plus here at the university.

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And so it is based on an extra credit and recognising learning that is done beyond the classroom.

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So we want to build a module. So we have decided to give it another format to this that our students and academics will find it very helpful.

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But this really is all I had to say.

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Please do get in touch with me to find more about the project and even work together if you're interested in those areas.

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What I would like to do now is actually show you a little bit what the toolkit looks like in terms of it's version that is the e-book version

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that we have developed not the Articulate version and so that you can see how it looks like flipping the pages of a book.

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You can flip the pages and you can select the different links.

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And it's good because the students also develop technical skills and they help us to create this on Canva, which is the tool we are using.

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And you can also download this as PDF

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And so we are working more now with the Neurodivergent students to make this more accessible and easier for them as well.

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So this is all I have to say for today.

16:02

Thank you so much for listening to my presentation. I was delighted to be part of this.

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Thank you so much for taking the time and please do get in touch if you're interested in this and I look forward to hearing from you.

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Thank you so much.

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