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Experiental Learning with Multisensory and Digital Elements

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Abstract

The study focused on how learning can be enhanced with the inclusion of multisensory and digital elements in the first semester tourism studies. The theoretical framework featured the experience economy, digitalisation, interpretation and inquiry learning.

The objective was to find out if and how students perceive the multisensory and digital elements included in their studies enhance their learning. The method was content analysis of small group discussions and written sources of information.

The results indicated that the students were aware of the role of the senses in their learning process, some being able to describe it better than others. The digital elements were found positive and essential for future professional life, but also distractive and causing concerns over privacy by some. In conclusion, the students felt that both inclusions enhanced their learning process. It is important to find the right mix of both human and digital elements in the studies. .

Keywords

Introduction

Finding that perfect mix of human and digital interaction to create memorable and engaging experiences is what both the industry and educational institutions are looking for. Senses and digital elements are incorporated in many travel experiences (Dan, 2013, November 13; Garcia, 2014, November 6; KLM, 2014; Marriott, 2014, August 19; Skift, 2015) and travel marketing (e.g. Visit Denmark, 2014; Isacsson, Alakoski & Bäck, 2009). Regarding education, several studies (e.g. Kolb, 1984; Lonka & Ketonen, 2012; Pallab & Mukhopadhyay, 2004; Watson & Pecchioni, 2011) point out that learning can be enhanced by making it more experiential. Gamification, storification, collaboration and authenticity are key elements in immersive experiences (Pine & Gilmore, 2011; Pine & Korn, 2011; Tarssanen & Kylänen, 2009; Lüthje & Tarssanen, 2013). They make people more engaged and motivated, as well as can

increase the learning effectiveness of students (Cattafi & Metzner, 2007; Woo, 2014).

Digitalisation is a megatrend which is driving global change and being a force of innovation (Schmidt & Cohen, 2013). Including digital elements in education provides students access to a multidimensional virtual world and an impetus for critical thinking and enhanced learning (Watson & Pecchioni, 2011; Westera, 2011). Finland, of all nations, should lead the way forward with one of the world's highest ranking digital ICT infrastructure (World Economic Forum, 2015). Despite this, the latest study (DIGILE, Liikenne- ja viestintäministeriö, Tekes, Teknologiateollisuus & Verkkoteollisuus, 2015, March 17) of the dissemination of digitalisation in Finland, Digibarometri 2015, states that the country does not yet fully live up to the potential.

Digitalisation also needs more attention in tourism studies. There is now a sense of urgency, both at industrial (Kauppakamari, 2013) and governmental level (e.g. Kiuru, 2014, September 22; Ministry of Employment and the Economy, 2014; Ministry of Employment and the Economy, 2015; Stubb, 2014, September 6) as well as at the institutional level at universities and other schools (Fun Learning, 2014; Rovio, 2014), to develop digital solutions and methods that enhance digital technology in education. The tourism strategy of Finland emphasises the importance of digitalisation (Ministry of Employment and the Economy, 2013.) Students need to be part of the digital society and have an ability to learn new ways to interact and collaborate in the digital age as well as be educated for careers that do not yet even exist (Voogt, Erstad, Dede & Mishra, 2013). Many students today, belonging to the Millennial generation, are very active in social media, but their ability to use the media for professional purposes can be limited. By incorporating digital elements and platforms in their studies, students can be better equipped to join the digital work life and acquire "21st century competencies". Thinking in the lines of Pine and Korn (2011), digital technology can be used to enhance many learning assignments just as it can be used to enrich experiences. When all senses are included in the learning process, learning can be more memorable and transformative. Infusing the senses and digital experiments in the learning process, the learning process can become multisensory and be perceived as an experience.

The aim of the study is to find out how students experience the senses – hearing, sight, smell, taste, touch and movement - and digital elements in their learning process. The research question in this exploratory study is if and how students perceive that learning can be enhanced by infusing digital elements and all senses in the process. By including aspects of the Experience Economy in their studies, students can become more aware of the learning, transformation and self-development taking place. The idea is that the results of the study can steer the development of the first semester tourism studies so that the semester can be improved further to equip students with the 21st century skills needed in their future work life.

This study has got inspiration from the megatrend of digitalisation as well as the tourism business (Experience Economy, service design, heritage interpretation) and the field of education (inquiry learning, RDI - Research, Development and Innovation activities, multisensory learning techniques and learning styles). They are all applied to enhance learning in the first semester studies of the students in Finnish degree programme in Tourism on Porvoo Campus. These fields of study are seen as inspirational sources for new forms of learning, where senses, experiences and digital elements are combined and engaged.

Literature review

Pine & Gilmore (2011, pp. 91-92) and Tarssanen & Kylänen (2009, pp. 13-14) state that in order to stage compelling, engaging and memorable experiences it is important to engage the five senses (hearing, sight, smell, taste, touch and movement). Experiences are often associated with the state of flow (Csikszentmihalyi, 1990), which is a condition when a person is so immersed in an experience that he or she loses all track of time or sense of place. In order to reach the flow state, the person has to have interest towards the issue and perceive it as a challenge, but still within his or her ability (Lüthje & Tarssanen, 2013, p. 61). Furthermore, according

to Pine & Gilmore (2011, pp. 56-64), finding a sweet spot for an engaging experience can be done with the 4E's: An experience has to be esthetic, escapist, educational and entertaining. All these can be applied to tourism education.

Tarssanen & Kylänen (2009, pp. 13-14) state that the more senses you use, the more memorable the experience is. Recently there has been a boom in experiential travel. Nowadays travellers are more demanding, ordinary products and services are not enough. That is why many service providers have started to stage experiences for their guests. According to the latest tourism industry reports (e.g. Skift, 2015), companies are looking for the right mix of human and digital interaction to create guest experiences. Experiences have come to the educational scene as well, as learning and education can be enriched by providing experiences.

Educational experiences are often associated with the highest form of change called transformation. Tarssanen & Kylänen (2009) define transformative experiences as positive, holistic and personal, which leave a permanent mark on a person, further, they cause some kind of change in a person. If an educational institution can cause that kind of experience and effect on students, they will have memorable experiences which enhance learning and transform the person during the studies. Similarly, it has been known for a long time that people learn better when they are actively engaged in the learning process and use as many senses as possible. Furthermore, they learn more if they are actively involved in creating experiences, not only taking part in them. Thus, being concerned with wellbeing of the students, the authors want to emphasise the importance of engaging people actively in the learning process and using as many senses as possible, be it a digital or a natural experience. As Pine & Korn (2011, p. 210) and Lüthje and Tarssanen (2013, pp. 68-69) state, experiences are created through interaction between the experience stager (in this case the supervisors) and the person experiencing the event (in this case the student). Digital elements provide yet a new level and a tool of enhancing the experience.

An example of the popularity of gamification as a tool for engaging students is the cooperation between the University of Helsinki and the game company Rovio. Together, they have established the Playful Learning Center (PLC), which studies playful learning together with businesses. The center researches new learning solutions by combining the forces of Finnish education experts and companies. The idea is to enhance Finland's status as a leading nation in education (Rovio, 2014). Playful learning is not just for primary school pupils, but learning games can be used at the university level as well. All education institutions can gain insightful knowledge about engaging students by studying the secrets of gamification.

In our hyper-connected world, students are bombarded with huge amount of information from multiple sources and only those that manage to hold their attention, can make a lasting impression. One way to make a difference is to combine entertainment with education to provide edutainment (Beato, 2015, March 19; Pine & Gilmore 2011, p. 64), improving learning through pleasurable experiences and emotions, e.g. in form of videos and games. Pine & Korn (2011) suggest that in order to enhance experiences, it is important to mix the realms of reality and virtuality. They have developed a concept of the "multiverse" where there are different realms for partly virtual and partly real experiences.

Storytelling and involving all participants in active co-creation through service design has become popular in recent years in both education and business (e.g., Stickdorn & Schneider 2011; Tuulaniemi, 2011). Interpretation is one form of storytelling, also a technique used in service design (e.g. Miettinen, 2009), which evokes emotions, enhances experiences and deepens understanding. One of the first experts involved in interpretation was Freeman Tilden (1977, in Timothy & Boyd, 2003, p. 207) who believed that visitors to an attraction should be involved by providing them with inspiration that is somehow related to their own life experiences and which they find meaningful. Furthermore, good interpretation should be artistic and provoke people to take positive action and be actively involved in the experience. In addition, it should be a holistic, tailored approach and

provide stimulation for many senses at the same time. Similarly, Heath & Heath (2008, pp. 203-206) argue that when people can identify with the issues and feel an emotional connection, it is easier to learn. Problem-based learning (PBL), the application of inquiry learning adopted for the first term studies in DP in Tourism, has its roots in constructive learning (constructivism), situational learning, situated learning, experiential and contextual learning. According to constructive learning, the learners are not just passive receivers of information but they construct and build their knowledge. Experiential learning as proposed by Kolb (1984), also called learning by doing, advocates personal involvement – learning involves the student's unique personal experience. Lonka & Ketonen (2012, p. 72) suggest that new interactive technologies facilitate the process of collaborative knowledge building. They also state that the effects of active ways of learning can take a long time to develop. Thus, a study time (for a bachelor degree) lasting for over three years offers enough time for transformation (as described by Pine & Korn, 2011; Tarssanen & Kylänen, 2009) to take place.

According to Finnish learning scholars Hakkarainen, Lonka and Lipponen (2004), students need a lot of variation and they should be encouraged to create learning material themselves and thus create knowledge. When students use new technology and social media they invent new social practices and behavior. The role of the supervisors is to select the themes, master the goals of the studies, and steer the learning process to the right direction. The same principles are present in the PBL tutorials in the Campus curriculum. The students are active learners, who construct and build knowledge. The supervisors are responsible for offering triggers/assignments/projects, which offer inspiration for the students, and tasks which the students find relevant and meaningful and which make them want to take positive action and engage them actively in multisensory learning experiences which enhance their learning. (Hmelo-Silver, Duncan & Chinn, 2007; Konttinen & Moilanen, 2013; Muukkonen, Hakkarainen & Lakkala, 1999; Räty & Laurikainen, 2015.)

Multisensory techniques are frequently used especially for teaching people with learning difficulties (Sirkkola, 2010). Similarly, it is useful for all learners to consider their learning style in order to find the most effective ways to study. In the beginning of their studies on Porvoo Campus the students take a VAK test (e.g. Fleming, 2001) which helps them to see whether they are visual, auditory or kinesthetic learners and they are offered suggestions how to learn more effectively. Of course, people very often have a mixture of learning styles. However, when understanding their preferred learning style(s), students can choose the types of learning that help them most. In addition, they are made more aware of their chances to be active in their learning process. By offering multisensory experiences the supervisors can help the students to remember the concepts better and enhance learning.

All the above mentioned aspects are at the core when planning the first semester tourism studies on Haaga-Helia Porvoo Campus.

Methodology

The data collection took place in the autumn of 2014. The participants were all the 45 first semester tourism students in the Finnish Tourism Degree Programme on Porvoo Campus. The method of the study was content analysis of small group discussions held by the authors and written sources of information (a probe, questionnaire and blog portfolios) by first semester tourism students. The idea was to find out about the role of senses and digital elements in the learning process. The pre-assignment for the development discussions, which were carried out in October 2014, was a questionnaire about the different senses involved in the assignments during the semester. The small group discussions supported by probes were carried out in November and the blog portfolios were written during September-December 2014. The sources of data collection for the study as well as the digital and multisensory elements included in the first semester curriculum can be seen in table 1.

Table 1. The sources of data collection

Data collection	Multisensory elements	Digital elements
Questionnaire + development discussions	X	
Small group discussions + probe	X	X
Blog portfolio		X
Multisensory and digital elements included in the first semester tourism studies (these were the elements that were expected to be included in the answers)	• Projects (organising events and study tours; staging experiences) • Workshops and sessions (customer service and sales workshop, feedback workshop, tours, PBL; especially senses oriented: Species of Spaces workshop with music, moving, dancing, touching) • VAK test	• Blog portfolio and blog posts (Wordpress) • Marketing and communications in projects and during Helsinki day (Facebook, Instagram, Tripadvisor) • Yearbook (LinkedIn) • Trend hunting for PBL tutorials (Twitter) • Digital learning platforms (Moodle, Leap) • ICT and Travel Technology

To begin with, as a pre-assignment for the development discussions, the students were asked to fill in a questionnaire where they were asked to write down and describe three instances when at least three senses (hearing, sight, smell, taste, touch and movement) were involved during the semester and discuss what they learnt from the experience. These answers were then compared and categorised. Next, before coming to the small group discussion, the students filled in probes, adapted from a self-documentation method used in service design (Mattelmäki, 2006; Miettinen, 2009; Segelström & Holmid, 2012), by recording critical incidents they encountered during the beginning of their studies. This was then shared in the discussions in small groups. The discussions were carried out in groups of 4-5 students and each discussion took one hour, all in all 11 discussions altogether, including all the 45 students. One of the questions in probes again dealt with multisensory experiences, and another asked if the digital assignments throughout the semester had been seen as a tool to enhance learning. These answers were then analysed and summarised by the authors. Moreover, the students opened a portfolio blog and were advised to write, among others, a blog post to describe their learning approach and a post about social media as a tool to enhance their learning. The contents of these posts were analysed, too, to find out what experiences the students found most meaningful for their learning. In the following, the results of the study will be presented.

Results

When analysing the answers for the probes and the questionnaires regarding which events, instances and critical incidents involved several senses and left an impression and taught the students something new, five occasions were mentioned most often. In them students were able to describe the senses that were involved and what they had learnt through them.

First of all, most students mentioned the semester project. The first semester studies include organising (planning and implementing) an event during which the students guide guests around the Campus, prepare and serve food for their guests. They plan the programme related to the theme and practise staging experiences for their guests. According to the students all senses were involved when planning materials, decoration, seating arrangements and trying out the delicacies made by the kitchen group. The students felt that they learnt a lot about cooking and various dishes, marketing (thinking about

what different advertisements look/sound like), serving dishes and drinks, organising events and co-operating in groups.

Similarly, most students also took up Species of Spaces workshop organised in the beginning of their studies. All senses were engaged when listening to music, moving and dancing around the Campus, touching the walls and objects (describing to each other how they feel), learning to know the work environment, getting to know each other. The students said they learnt a lot about their peers and the Campus building, learnt to relax, learnt more presentation skills and the importance of considering how to use various spaces when organising events and giving speeches. According to them the surprising experience made them to come out of their comfort zone. One student wrote: *"I was very nervous before the workshop I was going to organise at the event. Then I familiarised myself with the learning space I was going to work in, I felt the chairs and reorganised the furniture and decorated the space, checked the lightning and let fresh air in. I felt more comfortable after that."*

Furthermore, half of the students also mentioned the activity and sports day in the beginning of their studies which was organised in Vierumäki for all new students. Through various senses they learnt a lot about the activities, got to know each other better and learnt to trust each other.

Moreover, one fourth of the students mentioned Helsinki Day where stories are created when the students are let loose in the capital city and they can create itineraries for their chosen target group. Also, they carry out a mystery shopping experiment. They are encouraged to share images on Instagram and Facebook. The students stated that the senses of sight, smell, hearing, touch and movement were engaged when they walked around Helsinki and admired its attractions. They learnt a lot about the famous attractions, history, architecture and atmosphere of Helsinki. The students mentioned that the senses of sight, hearing, taste, touch and smell were used during Mystery Shopping: they visited restaurants and assessed the product (food) and customer service. They assessed the atmosphere in general (music, smells, decoration, furnishings, cleanliness,) food, appearance of the staff and service.

Similarly, Sales and Customer Service Day (including drama and role-play workshops) was mentioned by a quarter of the students. The senses of hearing, sight, touch and movement were stimulated and the students said they learnt sales skills face-to- face / on the phone, networking, socialising, communication in English (the importance of eye contact, body language and voice) and customer service through their senses.

In addition, a freshmen party, PBL tutorials, Porvoo guided tour, ICT lessons, and some other instances where students in addition to sight and hearing were able to use a third sense were mentioned e.g. clicking a mouse, using a keyboard, writing notes, tasting some sweets.

All in all, the results of the questions about multisensory experiences and small group discussions suggest that all students are at least able to distinguish the effect of different senses in their learning process. Some students make sharp observations and are really well aware of using their senses and the fact that it supports their learning and they are able to analyse and describe very thoroughly how it facilitates their learning. One student described it this way: *"I have started to look for experiences in my studies and life in general through sharpening my senses. I feel that if I involve more senses in my learning experiences I can learn more."*

However, there are some students who do not feel that they have learnt anything special by using their senses even if they remember and come up with the events and experiences. Some emphasise that they should become more aware of the importance of using all their senses and appreciate more and take more advantage of multisensory opportunities offered to them. The supervisors have a role to play as well, as one student wrote: *"I have a feeling that most peer students don't get the point of thinking about their senses, perhaps it would be worth explaining it more carefully to the people who don't find it important."* The results suggest that the assignments that have been planned to enhance learning function in the way they are planned, but the supervisors of the first semester can still support students more in becoming more aware of the importance of using all their senses and in reflecting on their learning.

Regarding the digital experiments, students were asked to write a blog post in their portfolio about how digital experiences had contributed to their learning and in a small group discussion they were asked what kind of experiences they have had with the digital inclusions in the curriculum.

During their first semester studies, the students are introduced to social media and taught to use it for professional purposes, e.g. following digital influencers and travel organisations on Twitter, creating a LinkedIn profile, posting images using appropriate hashtags on Instragram, posting study-tour-related stories and pictures on Facebook sites, writing Tripadvisor reviews as well as being encouraged to share other Porvoo Campus related material to their own networks. The main social media inclusion in their studies is the blog portfolio. In addition to being a learning portfolio, the blog has also other uses. The number of reports has reduced and the students have been asked to write informative and professional blog posts with sources instead of reports. Of course, the semester has other digital inclusions other than the social media assignments: They have ICT and travel technology classes as well as use digital learning platforms. The degree of digital experience varies greatly among the students. Some of them have personal blogs and are even experienced bloggers, others have barely used digital channels for school work. Therefore, the idea is to softly introduce more digital elements throughout the semester, start using social media for professional purposes and be ready for more challenging digital assignments in later semesters. The idea is that all of them will be better equipped to join the work life and be more digitally savvy.

The results of the content analysis of the probes, blog posts and discussions regarding the digital elements revealed that the digital experiences were divisive. The clear majority of students found the digital assignments useful for their learning process, but a small number of students disliked them strongly. A few students would have needed more information about the digital tools and platforms in order to feel confident about using them. As a whole, the students understood that it is important to be tech-savvy and know about the digital ways of communication and networking. Some stated

that doing assignments in a blog form motivated them and made the laborious process of writing a portfolio even interesting. They have perceived what an important role social media plays in the travel industry and how digital sources provide the newest information available. One student wrote that *"looking for information through social media was a strange idea at first, but it has turned out to be effective."* Many stated that they have never used digital methods as much as during the first semester and they appreciated that so much information was available in a digital format as well as having laptops provided by school, making student life easier. Also, some stated that they had started to use social media for professional purposes, too, as one student put it: *"It is good to be active in social media already in the beginning of studies, and to know where the industry is heading and follow its movements and developments."*

However, there were a few critical voices saying that there were too many social media and digital inclusions. Some were more accustomed to traditional paper and pen based study methods, and felt awkward with digital school work to start with. The overload of digital information and getting lost in the digital spheres were overwhelming for less than a tenth of the students, who also felt that the school was forcing them to be active in the digital media. They were looking forward to the school holidays as that would provide them with a possibility for a "digital detox".

Nevertheless, the vast majority of the students liked the versatile digital assignments that allowed them to think and look for digital sources of information and learn critical thinking in the process. Facebook, Twitter, Instagram and the portfolio blog as well as the digital learning platforms were mentioned most as examples of digital encounters in studies. Looking for sources and sharing information at PBL tutorials as well as communicating in the semester projects were mentioned as the benefits of digital learning. The openness and transparency (due to the many glass walls) of Porvoo Campus were also mentioned as facts that enhanced collaboration and networking. Many students found more official sources of digital information sharing (such as the Moodle platform and email) to be

more reliable than their own Facebook groups where information seemed to disappear at times.

The biggest surprise for the authors was the fact that a third of the students put a password to their blogs, thus being against the principles of openness and sharing of digitalisation. Many had concerns over privacy issues even though their opinions about the digital elements were otherwise positive or neutral. The combined results of multisensory and digital elements included in tourism studies and what students learned through them can be seen in table 2.

Table 2. The main results of the study

Critical incidence	Learning and skills
Event project	cooking and various dishes, marketing, putting theory into action, group work, co-operation, planning and arranging an event
Species and Spaces workshop	presentation skills, trusting themselves and their peers, being aware of oneself, the importance of considering how to use various spaces when organising events, acting and giving speeches
Activity and sports day in Vierumäki	sport activities, getting to know and trust each other
Helsinki day & mystery shopping	customer service, famous attractions, history, architecture and atmosphere
Sales and customer service day	sales skills face- to- face / on the phone, networking, socialising, (the importance of your eye contact, body language and voice), communication in English, customer service
Digital elements (especially social media and digital learning platforms, blog portfolio)	understanding the importance of being tech-savvy and mastering digital tools; using digital sources teaches critical thinking and enables information sharing in PBL tutorials and in semester projects; social media seen as a valued source of up-to-date information, marketing and networking; started to use social media for professional purposes and intend to develop as users; engagement through visuals and networking

Conclusions

As this was an exploratory study with just one group of students, it is not possible to draw far-reaching conclusions based on the data available. However, as the aim of the authors is to further develop tourism studies and the curriculum, it is vital to learn from the opinions and experiences of the students. Therefore, as the material was derived from several sources and it all contained views expressed by the students, some conclusive remarks can be made and the results of the study give indications of how students perceive the role of multisensory and digital elements in their studies and how they see them enhancing their learning process.

To sum up, a lot of praise was given to opportunities of practice-based and problem-based learning and group spirit in the context of digital and multisensory learning. The students appreciated group learning opportunities and collaboration with their peers as well as the discussions with supervisors, as interaction enhanced their experience as suggested by Pine & Korn (2011) and Lüthje and Tarssanen (2013). The students acknowledged that the different digital and multisensory assignments helped them to digest the learning contents. The students appreciated the fact that digital learning was a part of their studies and reported increased usage of social media as well as intentions to start applying its benefits even more in their studies and networking with the industry. The beginnings of transformative experiences, as stated by Pine & Gilmore (2011) and Tarssanen & Kylänen (2009), were clearly already taking place. Somewhat surprisingly, there were also a few cynical voices among the Millennial Generation students, saying that dependency on the digital media was frightening and they were concerned about privacy issues, very much in line with the general public opinion.

All in all, the multitude of different learning assignments (including multisensory and digital approaches) was mentioned to enhance learning by many. The authors believe, based on this study as well as the previous 14 semesters of similar study methods, that incorporating the different senses and digital approaches in the curriculum increases the engagement of the students to study their chosen field. Based on the replies it is evident that more focus need to be put on learning professional digital communication methods and ways of being critical of digital sources.

Based on the results, some changes were already made to the following semester. A new session was introduced concentrating on principles of digitalisation, such as sharing and openness, in order to address the privacy concerns associated with writing a blog. This intervention resulted in less passwords to blogs. Also, even more engaging assignments were introduced to the studies, including InstaWalks and using a storification application in order to enhance the combining of visuals, voice and storytelling in recording study tours and events. The most important achievement so far has been the fact that the entire team of first semester supervisors has become involved in designing digital and multisensory assignments, and the response from the students has been overwhelmingly positive. The process has started in earnest and more people are enthusiastically involved.

In conclusion, by studying the phenomenon and the results of this study in more detail as well as looking at the upcoming feedback from the following groups of students, the multisensory approaches and digital assignments can be even further improved and developed to give the students even better premises to join the digitalised world of work and appreciate the value of the senses in the travel industry. The ultimate question for both the tourism industry and the providers of tourism education remains the same: What is the perfect mix of human and digital interaction to create engaging experiences?

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Annika Konttinen, Senior Lecturer, M.Sc. (Econ.), has 10 years of experience in teaching tourism at Haaga-Helia UAS, Porvoo, as well as another 10 years of experience in product development and sales in the travel business. **Niina Moilanen,** Senior Lecturer, M.A., has 18 years of experience in teaching English and tourism at Haaga-Helia. The authors share the co-ordination of the first semester studies for the DP in Tourism and find it important to study and further develop the semester. The first semester focuses on incorporating meta-competences and core subject matter in the curriculum through PBL (problem-based learning). The lecturers are both firm believers in the success of the PBL method in increasing information sharing among students and supervisors, and wrote an article about the topic in 2013. The latest development and this article deal with the inclusion of multisensory and digital elements in the studies. They are currently looking for the perfect mix of human and digital interaction to inspire learning.