

Operation Enigma: A novel TAME (Tri Active Modal Experiential) Learning Case Study Investigation

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Purpose

The DMU forensic science programme is accredited by the Chartered Society of Forensic Sciences (CSoFS) for three component standards: crime scene investigation (CSI), forensic laboratory analysis (LA), and the interpretation, evaluation and presentation of evidence (IEPE). This crime scene to laboratory to court process is the core of the Criminal Justice System, and this has to be reflected in the provision by universities facilitating forensic science undergraduate degrees, and the details specified for graduates within the QAA Benchmark Standards. This portfolio requirement has enabled us to effectively blend the physical, contextual and virtual domains, via a Tri Active Modal Experiential (TAME) learning model (a concept created by Nichols-Drew, 2015).

AT DMU, we implement TAME via physical (utilising on campus facilities such as the crime scene house and non-residential space, industry specification laboratory facilities, vehicle and the former Leicester Crown and Magistrate courtrooms), integrating contextual information (provided by academic colleagues from our practitioner casework experience and research informed teaching portfolios), with the virtual world (embracing innovative and immersive technologies; asynchronously within our VLE, and synchronously; in timetabled sessions).

In 2023, we launched our new block curriculum which was a significant contrast when compared to the previous year-long modules. Our PSRB requirements ensured that students were to continually demonstrate required knowledge, skills and attributes across/between/within each block module. Additionally, our External Examiner proposed that we enhance our assessments to be experiential and role-based to reflect the real-life practitioner setting. Therefore, in response to these challenges, we proposed and created a bold long-term initiative to ensure the enduring legacy of our TAME ethos, hence Operation Enigma.

Description

Operation Enigma utilises an amalgamation of pedagogic approaches within the educational setting for successful student engagement in a level 4 (1st year) block module. This is a transformative heutagogy, integrating professional expectations, via co-creation, peer feedback, reflection, experiential, participatory, object based, active, and problem-based learning (PBL) to enhance students' Graduate Attributes, with development of 21st century employability skills (collaboration, critical analysis, communication, creative thinking). Problem-based learning correlates with metacognition and autonomy, which evidence the principle of heutagogy; fundamental for a lifelong learning culture (Blaschke, 2012).

The premise of Operation Enigma is an emerging societal issue; County Lines, involving the exploitation of vulnerable people by an organised crime gang. We created our own case study at DMU incorporating crime scenes (victim's house, industrial location for the gang's operation, and a vehicle), case review and strategy sessions in seminars, and practical laboratory classes. Linking the entirety of Operation Enigma is digital technology (mobile phone, CCTV, social media, and background intelligence). The module teaching team were united in their passion, and motivation for designing this new concept, supported by Technician colleagues. In doing so, we have had the courage to be experimental, in an action research style approach to continually reflect, review, revise our delivery.

Outcomes of activity

We were able to create a unique student experience whereby students undertook the personas for varied job roles and specialisms, at the designated workshop spaces or laboratory setting; including Crime Scene Investigator, Drugs Examiner, Digital Forensic Specialist. By creating a sequential investigation that mapped to the students' schedule this enabled us to manage the learning experience via staged release of resources on the Learning Zone (Brightspace) VLE, which also supported students from feeling overwhelmed. We also wanted to ensure that there was a space of time in between the five component parts of Operation Enigma, which would also encourage students' investigative skills.

The only expected challenge to arise is the complexity of timetabling multiple colleagues, campus locations, and the student cohort, within the required (and correct) order of events. However, we have now developed a workable plan that can be utilised for a different investigation if the need arises.

We are of the opinion that this initiative was mutually beneficial; for students, and also, ourselves. This team-based collaborative approach enabled us to be innovative with our existing provision whilst conceptualising novel resources for contemporary themes. Therefore, a philosophy to be encouraged by any subject educator.

Impact on Students

Students praised the Operation Enigma investigation within module level feedback (where we requested stop, start, continue responses), and in their year group Student Voice meetings. The Module Enhancement Plan recorded such qualitative comments 'we like the case activities', 'I enjoyed the session where we created strategies', and 'taking part in the investigation was fun'. Student engagement was encouraged as Operation Enigma contributed to an online phase test also known as a MCQ (Multiple Choice Question), where students were provided with situation-based scenarios involving roles. This assessment was previously a challenge for students even with the provision of support sessions and revision quizzes. With Operation Enigma, there was an underlying impetus for students to attend sessions as this could assist their revision via 'hands-on' practical tasks. The quantitative metrics from the online assessment are also encouraging, whereby 100% of the cohort passed this assessment (previously this was 87%), the average

grade was 71% (previously 62%), which contributed to a module pass rate of 94% (a 4% increase from the previous year). Therefore, this evidence base does adhere to the sticky course ethos. By building on this inaugural delivery and sharing our learning with the remainder of the programme team we envisage that this 'sticky' culture will transverse all our modules as we continue to build our block curriculum.

Institutional Impact

Our approaches to real world learning within the forensic science programme, have been showcased in a webinar to the wider institution, and received academic innovation project funding to expand our portfolio of online resources, which were integral to our response to the Covid-19 pandemic, with the rapid transition to online learning. More recently, the innovative approaches of Operation Enigma have been highlighted as an example of best practice within the DMU Active Learning and Teaching Model, resulting in a presentation workshop to colleagues facilitated by the DMU Education Academy, with disseminations externally. We have exceeded our original objective as our vision has transformed our curriculum. Now it has been implemented, it is a sustainable approach, and with refinements that are scalable for different sized cohorts and environments.

Next Steps

The forensic science programme has initiated two new modules; based entirely on investigations, that the students will undertake in level 5: Operation Vestigium, and level 6: Operation Ignis. Therefore, offering TAME participatory learning opportunities throughout their student journey at DMU, whilst enabling the development of Graduate Attributes. Additionally, Operation Enigma has also provided us with novel opportunities for us to explore within our widening participation and outreach activity provision as a mechanism for student engagement and maximising the student experience. This model can be translated to other disciplines across the HE sector, as a benchmark exemplar of how to maximise student retention and progression. Ultimately, Operation Enigma demonstrates the paramount importance of authentic real-world learning offering a dynamic provision, that aligns to the 'sticky' course ethos.

Further Resources

Blaschke, L.M., 2012. Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. The International Review of Research in Open and Distributed Learning, 13(1), pp.56-71.
