Domain Applications of Project Management Knowledge (DAPMK): Beneficial Knowledge Transfer and Soft Skill Development for Life-Long Enhancement

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Abstract: The focus of higher education in the developed economies of the Global North has steadily shifted since the 1970s from being dominantly rooted in academic knowledge and learning as an end in themselves towards a wider perspective. The needs of the professions, careers and employability were present then, but were generally a secondary concern for the HEIs. The expansion of HE across more diverse populations has produced successive changes in curriculum and more broadly in purposes, strategies, and philosophies of HE. Against the background of global, economic, societal, and technological changes, the need to maintain 'traditions' but with wider relevance to society, personal adaptability, and capability as well as support for lifelong careers and learning have come to impact, HE main agendas. Most undertakings in life require the ability to define requirements, shape responses and form processes which will lead to achieving desired goals. In short, this is the nature of 'project' as a concept and of project management as a means to undertake what is necessary. *This paper reports on how the concepts and techniques of Project Management (PM) can be beneficially transferred in a process of soft skill development for life-long enhancement in the transitions from HE to employability and career*. A project was set up at University of West London as part of their knowledge transfer activities. The researchers have established 'proof of concept' and are currently trialling pathways for providing learning opportunities with knowledge transfer and soft skill enhancement. The opportunity to adapt the root concepts of PM to any domain carries enormous potential for enhancing HE outcomes and for wider continuing education and skills development across communities.

Keywords: Soft skills, Employability, Dissemination of PM knowledge and techniques, Independent learning, Experiential learning, VLE-supported study

1. Introduction

The ongoing effects of the contemporary digital transformation evident at a global scale are receiving critical attention from the academic and scientific communities, policymakers, industry and commerce, the public media and not least from 'digital citizens' who are impacted directly and indirectly by the changes arising from the technologies. There are perceived benefits in terms of economy, costs, productivity, dissemination of information and facilitation of wealth creation. Yet, there are growing concerns about information security, cybercrime, impacts on underprepared users and citizens, the growth of surveillance, boundaries to expression and challenges to legal policy and law making. There are questions of relations between the nation states and 'powers' and the impacts on individuals and citizens. If these issues are coupled to the challenges of Artificial Intelligence (AI) and the crises of energy supply, global sustainability, and health of populations, then the horizon sometimes looks gloomy.

So much for planting our theme in the wider context. As a counterpoise to the turbulence that seems to follow in the wake of technology, the idea that appropriate education and learning will contribute as much, if not more, to our survival and thriving than (digital) technology alone needs examination. However, we choose to define a collective future and give it a name like 'digital citizen / citizenship' there is an irreducible human factor which must enter any calculation about the future. There is no doubt that technologies of any kind have enhanced human reach and competence, but human physical endowment in body, mind and spirit are and will remain fundamental to the identity of the human species. There is consensus about how to prepare for life and the future, although we immediately have to face up to global disparities in opportunities, inheritance, structural conditions and resources.

2. Academic and Institutional Support for the DAPMK Study

The specific project presented in this paper received seed funding under an internal UWL (University of West London) call to stimulate initiatives and innovations in knowledge transfer. The formal support was applied to the project between April 2022 and March 2023. Subsequently, support is moving to the possibilities of stakeholder engagement both internal to UWL and external. A putative business plan is under development, and this is pointing to further stages of development towards ways to engage with several broader agendas.

3. The DAPMK Project Concept and its Goals

As a response to the multiple transformations outlined, the concept of *'Domain Applications of Project Management Knowledge (DAPMK)'* was proposed as a beneficial means to promote knowledge transfer and soft skill development for life-long enhancement of personal development. Our discussion builds on an independent learning project underway at University of West London. Project management (PM) is a well-established and autonomous discipline and field of practice with established focal points; for-example, in engineering, construction and infrastructure; in business and commercial enterprises for areas of planning, design, implementation and re-engineering. Beyond these core applications there is massive potential for transferring PM knowledge and techniques into many other fields. This holds the promise of upskilling the workforce at large to meet future needs. PM is truly a utility and a competence of great value and applicability. Only a modest number of the staff are PM specialists but the case for wider propagation to generalists is strong.

The approach uses a sequence of activities examining Project Management as a component of soft skills acquisition in higher education in the context of developing employability, building soft skills competences in graduates, and the integration of knowledge, skills, activities, and practices. These activities develop employability, build soft skills competences in graduates, and facilitate integration of knowledge, skills, activities, and practices as the learner moves on into employment in their chosen occupation, as well as supporting them for the inherent dynamism and uncertainties of the labour market in varied sectors.

The project extends the range of application of well-established project management (PM) knowledge and techniques to diverse and non-standard curriculum areas. A *Root model of Project Management* provides the basis for a module prototype. A trial using students from UWL Schools is revealing useful results for continuing development. Conventional higher education can only achieve so much. Thus, independent learning using collective engagement to develop transferable knowledge and skills is a vital step in the long-term transformation of human capacity to meet the challenges of the digital transformation wherever and whenever it is encountered.

At this stage (mid-2023) we have accomplished a pilot study for development purposes, and this will be further trialled on a larger student group at UWL. What have we learned so far from our efforts and how can the like-minded practitioners and researchers enhance our collective knowledge in this field of soft-skills development?

4. Background Studies

A literature search was carried out to establish a baseline. A search was conducted using Google Scholar before a database search was employed using the ERIC, CORE and Science Direct databases identified as containing relevant archives of literature. This identified that there was a considerable amount of literature on teaching of soft skills, study skills and employability skills but *little relevant to the use of zero credit or low credit modules specifically teaching project management outside of the discipline of project management using a VLE*. The full search was carried out up to late 2022.

The following search terms were used:

- Virtual learning environment project management
- Project management VLE
- Blended learning project management
- Virtual learning environment project management soft skills
- Zero credit modules

The search yielded ten relevant journal articles and conference proceedings and a further two articles from the grey literature as well as a case study from Sheffield Hallam University. The main themes from the literature included the effectiveness of using VLEs with project management (Ojiako, et al., 2011) (González-Marcos, et al., 2016) (Puplampu & Tutesigensi, 2008) (González-Marcos, et al., 2017); the benefits of teaching project management outside of the project management field (Ojiako, et al., 2013) (Vanhoucke & Wauters, 2015) and ways in which micro credentials and zero credit modules can be delivered to improve student soft skills.

VLEs and project management and soft skills. The use of virtual learning environments has developed considerably since 2020 when COVID-19 restrictions required universities to switch to teaching remotely, necessitating the use of VLEs for almost all teaching and assessment.

Several papers are quite positive on use of VLEs for teaching project management skills with a study of graduate students undertaking distance learning courses using VLEs in Indonesia did find that students felt that they had

gained soft skills from through the use of these methods that could be delivered in a virtual environment (Ratnaningsih, 2013).

Teaching project management as a soft skill. In the papers surveyed there was a consensus that it was valuable to teach project concepts for its benefit as a soft skill that can be widely applied and that is valuable to employers when assessing the suitability of candidates.

Micro credit/zero credit modules and teaching project management. Shu-hui et al (2018) argues that micro credit courses can be a good way of encouraging students to study independently on a wide range of topics as the need for ever great scope of knowledge is required in fields such as ICT.

Carins et al. (2018) have written on their experience of introducing project management soft skills modules developed in partnership with students that aimed to give students transferrable skills. Their method was aimed to go beyond a "bolt on" method whereby they are entirely separate from the rest of the course content but was not fully integrated into the main curriculum of the courses it was delivered to. They found that this partnership model is good for transferring knowledge from one department to a broad audience.

They received limited student feedback on the programme which suggested low discontent but also significant apathy to the programme while some students felt the content unnecessary especially as it was compulsory (Ibid). The main challenge they found to implementing their model were the existing structures at their institution that created obstacles for working in partnerships across departments. Therefore, they concluded that their method of offering transferrable skills in a pseudo "bolt on" style of teaching of transferrable skills is viable but requires significant staff buy-in and enthusiasm (Cairns, et al., 2018).

Oxley & van Rooyen have written that the challenge for developers of micro-credentials based on skills is to focus on the needs of students with the argument that currently the focus is on needs of large companies. They also assert that zero credit modules often fail to motivate students. (Oxley & van Rooyen, 2021).

University of Sheffield reported success with a skill based zero credit module teaching soft skills to mathematics students. The approach incentivised students by becoming part of their transcript and was taught across all three undergraduate years (Rowlett & Waldock, 2017).

Recent studies report positive outcomes for game-based learning in PM (Jääskä and Aaltonen, 2022). A systematic review identified tutor training and delivery planning in PM courses as success factors (Farooq, Hamid, Alvi, & Omer, 2022). In Australia, Afzal & Crawford (2022) observed that VLE used in combination with communication platforms produced good performance on PM courses.

Emerging conclusions from studies. Project management skills are valuable to many fields and students benefit from learning transferrable skills associated with project management. There is some consensus in the literature that the best way to deliver skills-based modules with low or zero credits is to involve students in the design of skills modules to increase usefulness to of skills obtained and deliver modules at times that complement students' wider studies.

Experience from our trial is providing evidence of student usability, which will inform further development and post-course evaluation will explore the question of student contribution to design. We used non-monetary incentives to engage and reward trialists (student membership for a period to the professional body and university certification as evidence). We have identified two periods in the student year which can prove attractive to trialists without 'clashing' with other priorities in their study year.

Virtual learning environments offer a means to deliver project management skills and it has been demonstrated that it can be used as a way to give students new knowledge and skills. However, this research study project provides a case study highlighting the validity of this approach. Overall, there is limited research directly into the use of VLEs to deliver project management skills to students in diverse and non-curriculum areas and the field would benefit from further study. This project study is helping to break new ground in this area of independent learning in PM for soft skills and employability.

5. Pedagogical Underpinnings for Soft Skills Development

The project environment of this study reflects the HEI setting of UWL. UWL is a UK post-1992 university representing an example of the fifth or sixth generation of UK HEI in its historical setting. These are typically institutions of diverse and local origin, serving predominantly urban areas, and designed to promote access to their communities. After 30 years of 'new' governance they are nationally outward looking to support their regions, industry, commerce, services and employment needs; in addition, these HEIs are making international

links and partnerships. More specifically in the UK these institutions are profiling their academic offer towards the changing economy, engaging broadly with the digital technologies, and blending traditional university and higher education roles and values with national needs. Employability (of graduates) is the current overarching motif, and for the HEI means responsibilities for workforce enrichment, upskilling and maximization of individual capacities to prepare the graduate for a life of change, challenge, and flexibility in a highly competitive world.

The DAPMK project has emerged in this setting. Classic project management (PM) provides an ideal canvas to broaden experience for general graduates – that is for those who are not specializing in the discipline or in its close proximate disciplinary areas. Thus, the project is focused on '*domain applications (DA)*' – those which have few historic links to classic PM applications. In this approach the DA is the target for the PM application as a means of soft skills development to enhance employability. The processes engender knowledge transfer (from PM to DA) and then play a part in shaping the learner in ways useful and relevant to the emerging knowledge-based economy, exploiting both the digital / technology dimension as well as the social and personal dimension.

The learner population in the majority of undergraduate studies (Level 4 to 6) and postgraduate studies (Level 7) is faced with a heavily structured and loaded curriculum. There is a resource problem to be solved and pedagogical norms have been empirically determined and codified in HE quality assurance. The core parameters within course length are ones of study mode, study calendars, course and module credits, formal study/contact hours and recommended learning hours. Experience and reality shows that the margin to provide formal 'tool support' within courses is very low, although much is made of support and acquisition of technique within the learning structure. There is a strong belief in experiential processes of learning and consequential building of skills and techniques, but some doubt about formal effectiveness of these in producing personal transformation post-HE. An underlying intention of DAPMK is to address a widely usable alternative to the 'status quo'.

There are a number of approaches to 'extra-curricular' or voluntary learning where a motivated individual uses learning materials for independent study. In the pre-digital era providing support to learners beyond the printed page was rare if there was no means to support distance learning or to provide tutor support. What learning was achieved was undertaken in a linear mode with minimal external support. This mode was solitary and limited in scope. Dealing with complex tasks, extending assessment, and allowing for the benefits of group work, interaction and sharing study and outcomes was usually out of scope of these approaches. True the student could work at their own pace and location but this isolation from the hegemony of the classroom was limiting. The historical model of institutionalised learning and teaching was the only practical alternative. The 'school' model was not universally effective for achieving rapid, advanced, and more complex outcomes. But, change was inevitable and still continues with force to transform learning in formal and informal education as well as in industrial and workplace education and training.

Educationists stepped up their interest in skills and learning facilitation on the back of the great expansion of HE after the 1960s especially in the Anglo-American world and those influenced by it (e.g., Canada, Australia, New Zealand and to an extent in Scandinavia). Continental European HE traditions tended to follow rather than lead on these trends, but by the 1980s these issues were matters of global interest and concern. Since the 1990s and by 2000 the digital technologies have impacted very strongly on skills and learning facilitation. The evolution of educational technologies and the contemporary dominance of digital resources and platforms now provide clear means of support. The structures and resources available facilitate learning in all directions, synchronously and asynchronously, with interfaces and embedded tools to assist the learner (as well as the tutor) to be focused, creative, adaptable, communicative, and interactive

6. Learner Engagement Within the DAPMK Knowledge Transfer Pedagogy

This paper (*and the associated conference presentation*) provides a first report on a research micro area. At present, the methodological perspective is one of exploratory inquiry in the qualitative tradition, which if developed would be towards multifactorial real-world research. Our experience is offered as a case to those within a broader field of knowledge transfer pedagogy. So far, one prototype trial had been carried out (n=15) and the lessons learned from this will be incorporated in a larger UWL-based trial (n=60) with a more ambitious testing and proving plan with various stakeholder groups to follow. An active business plan could emerge from this phase. Gathering the trial groups required timely and delicate liaison with course leaders, as well as extended communication, explanation, reassurance and briefing with the triallists.

The project team has also had the experience of scheduling the project work within the student year, with its varied workflows, pressures, and priorities. The research subjects have to let their participation be governed by their main student priorities (of class attendance, study time, and assessment deadlines) irrespective of their enthusiasm to participate and willingness to devote their time to personal development in terms of additional

voluntary study time, with potentially high payoffs in terms of soft skill acquisition, employability and tangible benefits (student association with APM (Association for Project Management), certificate of participation, and additional experience to add to CV and profile).

The project team recognize the difference between the idealized work plan, and one tested by the reality of implementation. Yet, the experience and knowledge gathered from the 'gap' once again shows the value of pilot studies when the improvement to practice is incorporated into the subsequent work.

There are key components which have been brought together in the initial DAPMK project and its products.

- A model proposal outline which can be used to replicate the application in future settings.
- A distillation of the principles of PM by creating a Root Model of Project Management (RMPM).
- A synthesis of PM knowledge derived from a working experience of teaching project management in several universities and reflecting the contemporary culture of business and management education.
- The preparation of a model package for outlining the learning process (the DAPMK Study Guide for Participants).
- The engagement of student subjects to take part in trials of the DAPMK package.
- The interaction with course and staff tutors in the schools from which students have been engaged.
- The creation of a VLE platform to carry the package and materials to support links to other resources.
- Guidance processes and protocols for learner trialists.
- Arrangements to support a cycle of delivery of the package from inception and recruitment to monitoring and support over the cycle.
- Development of research instruments to support delivery as part of the research and to allow transformation into support materials for group and self-managed study in operational settings.
- Provisions for maintain student motivation & effort in a self-sustaining independent study situation.
- An evaluation of alternative settings and modes for delivery.

7. Expectations and Realities (Designers and Learners)

The recognition of the diversity of learner circumstances, their situation for participation in the experience and the personal resources they can bring to the task are crucial factors in generating expectations and determining the 'reality' of the experience. Factoring in the substantial higher education teaching experience of the tutor-researchers and their access to the experience of colleagues inevitably created a certain level of expectation on their part. Tutors develop senses of expectation about how their students and learners will engage and be impacted by the learning experience offered. This is no less true in the DAPMK approach even in a limited setting. Nevertheless, the tutor-researcher expectations are set high as their task has been to design techniques to reach a high standard of potential achievement. As the team shared the project idea with course leaders and tutors and engaged with students who could be potential trialists, the initial outcome was three convergent sets of views.

The project team had a strong belief in the approach, potential stakeholders were very interested and showing positive support, and student enthusiasm was strong (reflecting positive pre-disposition to such activities, employability, and career concerns as well as a sense of value to be gained and a motivation to undertake what was required of them). Pre-test and post-test instruments have provided indicative evidence of expectations and realities. Between the prototype phase of October 2022 to January 2023 and the next scaled up trial there is an ongoing recalibration of expectations and realities between stakeholders.

The responses from the pilot are qualitative and indicative only. The number of respondents (n=15) is below the threshold for drawing any generalizable conclusions, but the observations collected are valid for the context. To go further in this process will require more research resources to collect, process and evaluate data yielded.

Yet, there are some significant observations and pointers which can be elicited.

The study guide was purposefully explicit in what could produce effective outcomes, but how far can task progress be assumed (and tracked by products provided and uploaded to the VLE, or by monitoring the use of the VLE)? Logs and diaries and internal reporting was recommended but the yields are variable.

- The model used in the study guide provided for group activities, evaluation, reflection and progress tracking through tasks. This provides material for assessment by the learners (and by any external mentor, tutor, or assessor).

- Creating the study guide, the VLE and setting the whole process in train required a substantial effort. The first two elements are capital investment, but the operation of the process is a variable burden (and cost).
- Guidance was provided formally at the start of the process and then on a weekly basis. The lead tutor adopted a 'hands off' position so as to respect the autonomy of the learners.
- Questions emerged in the minds of the design team as the process progressed. The pilot was a good way to capture incidents and concerns, and a number of operational matters were resolved for future practice.
- Recorded outcomes, documents generated, and presentations made indicate that the learner experience has at least brought qualitative changes in experience and outlook.

8. Interests and Partnerships – a way Ahead

However, the DAPMK project has marked up a number of concrete gains which have wider significance:

The project is located within the literature on independent learning methods in the specific area of project management (PM) and confirms that there is a gap in provision.

A conceptual model has been created for the development of a learning platform for broadening the knowledge, skills and application of PM towards non-traditional domains. This concept has been embodied in both the project vision, goals and name DAPMK (Domain Applications of Project Management Knowledge).

The project has stimulated contacts with course leaders and students in other Schools to explore current practice and potential for domain applications of PM. In essence an internal knowledge transfer activity.

There is now a substantial fit for purpose independent / collaborative learning platform for the DAPMK project using the Root Model of Project Management as the knowledge framework. This platform has been developed on the UWL BB VLE with potential replicability to other platforms.

A fit for purpose curriculum and syllabus with a module compatible pedagogy has been elaborated and tested. Conventional PM teaching resources have been leveraged into the platform and curriculum to provide technical and knowledge support for the independent learners.

Trialling of the DAPMK module and platform is feasible for delivery. The underlying dynamics of implementing independent collaborative learning in real time in an HE environment are evident.

The project achieved key performance indicators in response to the HEI institutions requirements.

With the initial seed funding from UWL, strong support from the APM and some strong and positive feedback from course leaders at UWL there is momentum for further development. Initial indications for future development of a hybrid independent- collaborative learning platform and resource are favourable.

Students appear to respond to the idea of additional independent learning in the context of developing their soft skills for employability, as well as for experiencing learning about PM as non-specialists up to the level of acquiring a usable generic transferable skill. From a developer and educator perspective there is a need for initial investment in concept, programme, and platform development, as well as a system of supportive administration and necessary feedback and guidance methods. Course leaders are forming their own impressions and potential uses for such a non-specialist PM learning application with clear added value for the learner in terms of soft skill acquisition and employability.

9. Models for Development

The UWL Seed Fund provided a small but critical financial resource for the project group to initiate development in terms of making their proposal and contracting to deliver a response. UWL staff and technology resources have exploited sunk costs underpinned by tutor obligations to undertake development and research. The work done suggests considerable field potential and there is ambition to pursue this. Any future development will need a cost model to address development overheads and operating costs. A number of stages have been identified towards a possible 'business plan' which is compatible and replicable within the HEI environment.

UWL / HEI Internal Exploitation as a model for wider application: In this model the DAPMK platform would be developed as a conventional validated module. To date, this development is pending although there is known interest in it from participating Schools.

Under this model of university Internal Exploitation, the Schools would need to make the budgetary case for development in the normal manner. Once the module was validated for use it would be appropriate to seek

professional accreditation from bodies like APM, with whom the team have explored development. The validated module could be delivered for full credit, but also could be considered for zero credit use in a course, where the module is mandated as part of the qualification.

UWL / HEI Enterprises and the enterprise skilling model: The DAPMK learning platform has feasible commercial potential to generate revenue for stakeholders and investors. Part of the model of university enterprises is to exploit intellectual capital for commercial gain. In reality the corporate notion of a university is one of a collective of stakeholder interests, who can profit by recognizing their mutual interests and potential for collaborative endeavour. UK universities started to develop a business and commercial 'face' from the 1970s: UWL with its initial foundation priorities has been a later comer to the possibilities of adjunct commercial enterprises. However, many Schools have had a very long industry facing culture even in its FE/HE days of ECHE (Hospitality, Tourism, Arts, Media, Music, Law) but these were not seen as institutionally strategic and were poorly represented in the organizational arrangements. In the last ten years there has been progressive and substantial change. The DAPMK project is well suited to leverage into this environment.

'Enterprise' is now recognised as a school axis as much as one that can be run through a Central Agency (e.g. university company or similar vehicle). The universities have been developing an enterprise environment with commercial possibilities, but it may not be widely appreciated, understood, or fully encouraged (given the many demands on the university and its staff at large).

Investments required, resource costs, market characteristics, delivery requirements, pricing and revenues, budgets and commercial strategy are all factors within university expertise. However, these models may not be flexible and/or innovative enough to respond to market conditions and opportunities.

The DAPMK has considered how their 'IP' can be developed equitably to the mutual advantage of all stakeholders. The university has organizational, business, and financial capacity as well as legal authority to contract, but the academic and research stakeholders provide the substantial majority of the "*knowledge, IP and pedagogical resources"*.

Training Partnerships (TP): multiple stakeholders: A third model is a Training Partnership. Different capabilities from different partners would be recognised in a coalition. Over the last year the DAPMK team has been surveying the field of potential partners.

A collaborative TP would need to be created so that it could identify a degree of freedom and commercial autonomy as the basis for its sustainability, operations, and creation of beneficial surplus. The DAPMK team are modelling the design of such an entity and to move ahead would need to identify suitable specific partners to develop a workable business plan. The TP would establish a number of 'delivery platforms' with support required and offered. Packages could be delivered to various segments:

- Independent groups with direct delivery
- Supported franchises for a) industrial and commercial clients who can be of small, medium and large scale; b) public sector bodies; c) Voluntary and third sector, which may also cover SME social enterprises.

This model is usable at both national and international levels.

10. Platform and Pedagogy: The way to Transformation and Success

The DAPMK approach exemplifies and exploits the utility of blended learning. Multiple dimensional uses of digital technology are showing the way to a global standard for all education and training. Clearly, the imbalances in access and resources still inhibit global reach, but the expectation has been created and realization will follow in stages. Blended formulas provide a flexible menu across the range of techniques, exploitation of knowledge and communication. These become the main routes to knowledge transfer, skills enrichment, employability, innovation, productivity, and wealth creation.

11. Assessment of the 'Learning Experience and Transformation'

The indicative outcomes, even at this early stage show the possibilities. The experiences observed show that learner curiosity, desire for engagement and constructive motivation provide the catalysts for experience, which when allowed time, opportunity, and space to follow the DAPMK module led to greater knowledge, improved competences, and a positive consolidation of learning outcomes.

Our goal has been to demonstrate that classic project management can be transferred to domain contexts, with beneficial outcomes for participants. The constraining factors are not surprising. Giving a realistic allowance of

time for the process to transform is a critical success factor. The interaction that can be developed for experiential learning and what learners can contribute to the process are parameters with qualitative impact. Experienced tutors in HE possesses an accumulated corpus of knowledge and technique which suggests what will work and what will not. If the outcome from DAPMK type experiential learning follows the overall grade outcomes across HE courses (in different countries, cultures, and systems) the predicted outcomes will be at least as good as the 'normal' curve for the HE learner population

12. Maintenance, Development, and Transformation

Human capability is the other side of the coin of technology. We have built a case for PM as a generic toolset which can be exported to non-classic domains. The DAPMK model offers a route to transformation in a world of digital technologies, where extending soft skills and knowledge are driving forces in improving employability, investing in people and workforce to achieve personal, collective and sustainable wealth creation in any context.

This paper reports on how the concepts and techniques of Project Management (PM) can be beneficially transferred in a process of soft skill development for life-long enhancement in the transitions from HE to employability and career. What can we draw upon form our experience so far? We have established 'proof of concept' for a developable process of skills and knowledge enhancement which offers great possibilities for career and personal development and employability.

The prototype was designed with independent collaborative learning in higher education in mind. There are learners who can engage in the challenge of a higher order of task demand that is required (*similar to real world conditions*) and who are prepared to bring personal discipline and application to the tasks. Achieving the outcomes certainly indicate a higher order of employability and soft skills. To widen the volume of successful outcomes in normal HE operating conditions will require increased levels of tutor support (or even AI-assisted support). Our initial experience suggests there are many maintenance and development issues we have yet to tackle. What we have learned about the modality of DAPMK in an HE environment also needs to be adapted to the wider industrial and organizational world, and this will be explored in future collaborations.

There is a 'PM learning gap' at the centre of discussions and actions on employability and skilling for the ongoing digital transformation. Thus, we encourage collaborators in every arena to provide focus and resources to assist in overcoming the knowledge and skills gap in Project Management.

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