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Take a Chance on CPD! How One School Put its Faith in the EntreCompEdu CPD Programme and Developed Whole-School Collective Entrepreneurial Education****

Summary

The case study in Dafen school represents a successful whole school experience of adult education through the EntreCompEdu continuing professional development programme (CPD). It represents how teacher collaboration enhances collective engagement to develop creative, innovative, and risk-taking abilities through teaching practices. It portrays how teachers' collective engagement has an amplifying impact upon implementation, energy, and confidence; especially influencing the entrepreneurial practice on student learning and the culture of a whole school. It validates how the headteacher and teachers collaborative action enhanced the adult learning in adoption of the new Welsh curricula. In this study we

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propose that the success of the teachers' professional development in learning to apply entrepreneurship education stems from a double loop of collaborative adult online learning and collective engagement under a pressure from the new entrants; a new curricula reform set by the Welsh government and the Covid-19 lockdown.

Keywords: professional development programme, CPD, entrepreneurship education, teacher collaboration, teachers collective engagement, collaborative adult learning

Introduction

Our 21st-century society demands new competencies and innovative approaches to learning with curricula designs that prepare students to think for themselves and work collaboratively with others (Vincent-Lancrin et al., 2019). This creates both the demand and opportunity for teachers to adapt (Ben-Peretz, 2011) through the development of Entrepreneurial Education (EE) pedagogies and teaching practices (Ruskovaara, Hämäläinen, & Pihkala, 2016; Ruskovaara & Pihkala, 2014).

This article reviews how a collaborative learning approach to EE through an online Continuing Professional Development (CPD) programme supported whole-school change. In line with the previous research, this case study confirms that teachers' working in collaborative manner is also supportive to student learning (Bryk, Sebring, Allensworth, Easton, & Luppescu, 2010; Lomos, Hofman, & Bosker, 2011; Nordgren, Kristiansson, Liljekvist, & Bergh, 2021; Ronfeldt, Farmer, McQueen, & Grissom, 2015; Vescio, Ross, & Adams, 2009).

The European Commission (2018) emphasises nurturing entrepreneurship competence, creativity, and a sense of initiative especially among young people. All young learners should have an opportunity to undertake at least one practical entrepreneurial experience during their school education. Entrepreneurship competence according to the European Commission (2018), will support the development of learners' capacity to act upon opportunities and ideas, and to transform them into values for others (Lackeus, 2013, 2015, 2020). This highlights the importance of creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social or financial value (Bacigalupo, Kampylis, Punie, & Van den Brande, 2016; Vincent-Lancrin et al., 2019).

Alongside EE competence (Bacigalupo et al., 2016) there is a focus upon improving the digital competence across all stages of education and training. The OECD (2021) calls for an upgrade in digital curriculum. This builds on the earlier call by the OECD (2018) for collective engagement and ownership, by teachers, students and other relevant stakeholders, in the progress of curriculum. Yet, all such new knowledge and application into daily practices elevates the need for systematic support for teachers which enhances collaborative work (Lefstein, Louie, Segal, & Becher, 2020; Nordgren et al., 2021).

The recent global pandemic has added further challenge to societal, economic and environmental issues around the world, forcing change to learning environments. This research provides an example of a collective of teachers who succeeded in developing their entrepreneurial competence, to help with the implementation of a new national curriculum during the pandemic, with the support of online continuous professional development programme.

Literature Review

The literature on CPD emphasises that any empowering professional development programmes (Avalos, 2011; Ben-Peretz, 2001; Fischer et al., 2018) share the same cumulative aim to enhance the teachers' change (Ben-Peretz, 2001) in their teaching practices, and thereof, improving the students' learning (Desimone, Porter, Garet, Yoon, & Birman, 2002; Hattie, 2008). Furthermore, previous evidence states that there is direct relationship between supporting teachers' adult learning and increasing student achievement (Drago-Severson, 2016; Guskey, 1999; Wagner, 2007).

Drago-Severson and Blum-DeStefano (2014) state that up-to-date, effective professional development is a combination of building individual skills and supporting new ways of thinking about those skills (Weiner & Lamb, 2020; see also Drago-Severson & Blum-DeStefano, 2014). Further, it is said that the effectiveness of the professional learning activities is clearly dependent on teachers' perceptions of the activities (Opfer & Pedder, 2011). However, it has been noticed that upon attending such programmes, the headteachers and teachers frequently report difficulty in applying the new knowledge and skills to their practices (Snoek & Volman, 2014).

Moreover, teacher professional development emphasises training programmes that equip teachers with knowledge and methods that are necessary to enhance their aptitude in a given theme (OECD, 2019; see also Hoban & Ericksen, 2004). Lai et al. (2016) refer to this as teachers' agency and draw attention to the activities themselves that modify professional interactions and activities in new and creative ways. Yet, literature critically points out that sometimes the professional development is disconnected from teachers' everyday practices (Avalos, 2011; Borko, 2007; Clarke & Hollingsworth, 2002).

It is well known that success in the implementation of entrepreneurship education in schools is dependent on the school, head teachers' commitments (Ruskovaara et al., 2016) and the teacher's practices (Ruskovaara et al., 2014, 2016, 2019). The teacher is the central actor in entrepreneurship education and the teachers' role in defining the time, frequency, contents and methods of entrepreneurship education is decisive (Ruskovaara, 2014). The key facilitation of learning regardless of the type of setting is in hands of teachers (Ruskovaara, 2014).

Yet, the school culture also plays a pivotal role in teacher leaders' success (Wenner & Campbell, 2017). Each school is an organisation with its own culture (Schein, 2003). Headteachers, teachers and students make up the school as an organisation that has, by its artefacts, symbols and espoused values (Schein, 2003), responsibility to teach and learn.

To support the teachers to sustain their professional learning of new norms, the schools need to offer clear development goals, deliberate balance and structure for the learning as well as safe, collaborative opportunities as a team to look beyond what could be seen differently of doing things and allowing to consider multiple perspectives (Drago-Severson, 2016). Earlier research evidence states that the head teacher's role is essential in leading the collective action in entrepreneurship education (Ruskovaara et al., 2016).

Since the new norms of the curricula need to be established and revisited over time, the collaboration is seen by evidence as another promising way to differentiate the adult learning, teaching and leadership and, thus, the headteachers, in guiding the new norms, play an important role for supporting working collectively together (Drago-Severson, 2016). This kind of collective engagement (Drago-Severson, 2016) similarly supports teachers in their quests to apply the new knowledge into practice, to fulfil the new curricular demands. Thus, the teacher collaboration at its best is characterised by a professional orientation towards meeting the goals of the organisation

(Nordgren et al., 2021) and reinforcing the teachers role as change makers (Penaluna, Penaluna, & Polenakovikj, 2020).

In response to the need for professional training programmes that are embedded in teachers' instant context of daily teaching practices (Eurydice, 2019; Kraft, Blazar, & Hogan, 2018; OECD, 2019; Opfer, 2016), the online EntreCompEdu continuous professional development programme was created using Erasmus+ funding to support teachers to introduce the EntreComp framework competences (Bacigalupo et al., 2016) into their teaching. The programme facilitates teachers by introducing what entrepreneurial education is and how to plan it within teaching practices, providing practical methods and practice-sharing for designing, facilitating and assessing through entrepreneurial learning (Grigg, 2020). The course is based on the EntreCompEdu teacher professional competence framework. The digital online EntreCompEdu entrepreneurship education programme collectively engaging the entire school seems to 'hit the nail on the head' with successfully embedding the new EE driven Welsh curricula across an entire organisation during the Covid-19 lockdown period. The programme itself serves as a new digital EE opportunity (Ratten & Jones, 2020) for collaborative adult learning (Drago-Severson, 2016).

In this study we find out that the online professional learning is not only cost efficient (Department for Education, 2018; Li & Dervin, 2018) but responds to the need of being available and connected to the teachers' everyday teaching (Avalos, 2011; Borko, 2007; Clarke & Hollingsworth, 2002), and allows one to rehearse the learning immediately in daily practices (Opfer, 2016; Kraft et al., 2018; OECD, 2019). Furthermore, by being available and accessible online 24/7, the professional training programmes reality engages teachers collaboratively and collectively to exchange ideas at all levels (Drago-Severson, 2009, 2016). When it is appropriately designed, this provides a new EE opportunity (Ratten & Jones, 2020) to enhance teachers' EE learning.

This article is divided in the subsections starting with the introduction. It is followed by the literature review and the descriptions of the contexts: Dafen School and the Welsh curriculum. It proceeds to describe the ethnographic methodology of the case study that seeks to answer the research question on how teachers succeed in developing their entrepreneurial education competence with the support of an online continuous professional development programme and their collective action when facing the new entrants of a new national curriculum in Wales and the Covid-19 lockdown. It presents case study findings of the different stages; including challenges

and results of different levels of experiences from nursery to all school levels with examples and involved stakeholders. In the end discussions reveal the results and conclusions summarise the outcome with suggestions for the further study. Limitations are listed at the end.

Dafen School – context of the case study

Dafen Primary School based in Llanelli, in South Wales, is an English/Welsh bilingual rural school with approximately 153 children, and 11 teaching staff, which includes teaching assistants. The school embraced the opportunity to make use of EntreCompEdu to assist with the implementation of the new 'Curriculum for Wales 2022'.

Following their engagement in EntreCompEdu phase 1, Dafen Primary School in Llanelli became the first whole-school approach to EntreCompEdu Pioneers. Initially approximately 70% of the teachers had signed up, but the enthusiasm and conversation generated outside of the platform meant that the remaining complement of teaching staff wanted to join in. Early collaboration was reinforced through a shared goal and led to early cross-class communications and support. A whole-school approach has a powerful impact in shifting the entire school into entrepreneurial learning as a guiding principle. They continue to contribute their best practice ideas for cross sharing across the EntreCompEdu platform. "Entrepreneurship education as introduced to us through EntreCompEdu released pupil creativity and innovation, and facilitated the development of the ability and willingness to create different types of value in society" said the Head Teacher "which is of timely benefit to us, as we work to implement a new Curriculum that places emphasis on the development of ethical, informed, enterprising, creative contributors."

The Welsh curricula context

The new Welsh curriculum has four core purposes which form the ethos of the entire education system to promote individual and national wellbeing. Wellbeing is very much at the heart of the whole curriculum. The goal is to create critical and creative thinkers, so that children are able to think creatively and critically, and think for themselves and if they see a problem,

take action and endeavour to leave the world better than they found it. The conceptual language of the EntreComp flower marries up almost perfectly to support the new curriculum goals.

The new Curriculum for Wales guidance is a clear statement of what is important in delivering a broad and balanced education (Figure 1). The *four purposes* are the shared vision and aspiration for every child and young person in WLE. The expectation is that these will promote individual and national well-being, tackle ignorance and misinformation, and encourage critical and civic engagement.

EntreComp competencies link to new Curriculum for Wales 2022

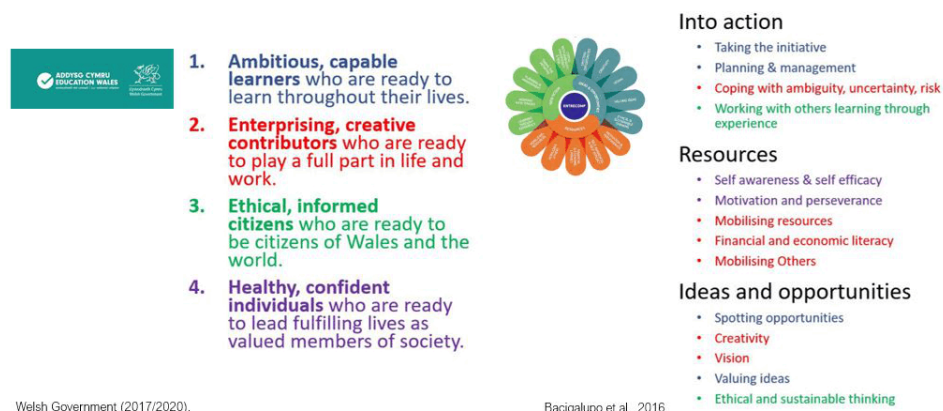


Figure 1. Colour-coded mapping of the EntreComp competences onto the competence areas included within the four purposes of the New Wales Curriculum.

Source: Bacigalupo et al., 2016, p. 11–13, and Welsh Government, Jan, 2020, p. 17.

Making use of the EntreComp Framework as an entrepreneurial learning approach to curriculum design is an appropriate fit to help educators target and unlock the ‘*creativity and innovation*’, ‘*critical thinking and problem-solving*’, ‘*personal effectiveness*’, and ‘*planning and organising*’ potential of learners, as expressed in the new Curriculum.

The schools felt that EntreCompEdu was a perfect fit to target and unlock things like creativity, innovation, critical thinking, problem solving, personal effectiveness planning, organising the potential of our learners, as it is envisioned in the new curriculum. And so, the journey learning began.

Online CPD

The online modules staff access house a breadth of articles, blogs and websites on entrepreneurial learning, to support the development and experimentation of new practical learning activities for their own contexts. There are also opportunities for staff to engage in critical reflection on their teaching practice, curating examples of their own teaching and activities to date. Staff can also contribute to an open forum feed to share ideas or best practices with other educators.

Research into barriers to CPD often highlights costs, the training itself, and the need for teaching cover (Department for Education, 2018). Yet many teachers will tell you that they need and want more CPD (Li & Dervin, 2018). Whilst the crises have not freed time for teachers, they have created the conditions for an increased appetite for entrepreneurial competence development, unleashing a form of entrepreneurial persistence (Millán, Congregado, & Román, 2014).

A teacher from Foundation Phase explains:

I benefited greatly from familiarising with the 15 competences before the schools closed. Progression achieved on the modules, I believe, set me up to be more accepting of the change I would soon face in my working environment. I've never been comfortable or accepting of ambiguity and uncertainty. Yet as I work through the modules, at a pace I can manage, I have become more aware of, and open to adapt in different ways. I sense a mindset shift in how I now manage uncertainty, and now even make it 'work' for me. I consider how I can also help my pupils through the activities set. I find the LoopMe feedback comments help me with processing the elements of the entrepreneurial competences. I am so inspired from reading about other teacher experiences and reflections in the open forum.

Many staff commented that it had been a useful means to decode and gain confidence with entrepreneurial language.

Another teacher highlighted:

The advantages of a reflective and experiential pedagogy, and that entrepreneurial learning, tapping into creative experimentation had widened perspectives, inspired new thinking and use of resources to more beyond a financial or enterprise focus, opening up more opportunities for the integration of broader value creation that includes the cultural and the social.

Methodology

An ethnography research method was employed since the authors were either involved in the design and/or delivery of programme, and observed and/or interacted with the study's participants in their real-life environment.

The study focused on the activities of the 11 staff (teachers and teaching assistants) of Dafen Primary school who engaged in the first phase of the EntreCompEdu CPD. The school leadership which included its governing body, supported staff involvement with EntreCompEdu as means to foster the development of curiosity-based entrepreneurial learning approaches and adaptation to a new national curriculum 'Curriculum for Wales 2022'.

Findings of the different stages

Felicity, a parent of three children in the school (4, 6 and 8 years), and Parent Governor of Dafen School originally pitched the project to her Governing Body in January 2020. The school, recognising the opportunity to support the implementation of the new Curriculum for Wales, gave full support.

Felicity made two visits to the school in 2020, in a pre-COVID period, and through a series of practical activities, introduced the staff to the 15 EntreComp competences. The staff were able to quickly identify different values and activities that could be embedded into their classrooms. They also self-assessed their own confidence across all of the 15 competences, making use of happy and sad emoji face stickers; identifying which they felt most confident in delivering or achieving our skills, and where they felt a little uncertain. It was interesting to see how the majority of the staff identify with similar clusters of competences. Straightaway this offered the view as to where they needed to develop as a team at the school, shifting the whole school to a new mindset making use of entrepreneurial learning as a guiding principle. This was a useful preparation to familiarise with the EntreComp flower in order to start the five EntreCompEdu online CPD modules. The staff gathered a sense that they would be able to capture and build upon their pedagogy, celebrating what they already do well whilst, working on new skills challenges.

After initial meetings with Felicity Healey-Benson, the EntreCompEdu trainer, a 'perfect storm' developed – COVID. All schools in the UK were shut,

and educators were told to take their computers home and figure out next steps. Ambiguity and uncertainty in a nutshell.

Early on there was a recognition, given that the training was easily accessible online with online tutor support, that the EntreCompEdu framework would be lifeline of support to help wrap heads around the challenge. During the period of school closure, the staff were able to progress through the modules. Some staff even reported the CPD helped them become more accepting of risk and ambiguity as they faced unprecedented change to their normal working lives.

The comments, responses, sharing of ideas and signposting links prove invaluable in developing clarity on all the competences and how they could actually be related to everyday teaching practice.

With the unprecedented shift to home-working and home-schooling, whilst staff were also timetabled for manning keyworker childcare hubs, the personalising of pace and timing of the CPD was paramount. Initially the staff gained confidence with the entrepreneurial language, becoming more familiar with each of the competences, and translating them into not only what that might mean for our pupils when we return to school, but what we could achieve during the period of formal school closure.

A crucial factor in the appetite for the CPD was that it made the language of the new curriculum feel far less daunting. Until this point, the new documents felt more theoretical. Staff had read and subscribed to the vision laid out in the 2015 Donaldson report, 'Successful Futures,' and the new Welsh Government (2020) 'Curriculum for Wales guidance' but it was still very open to interpretation for how it would be practically delivered by individual schools at the time. Through the lens of EntreComp framework as supported by the EntreCompEdu training, staff were now able to tangibly relate to how the new curriculum could be put into practice, adapting and progressing their skills. The EntreCompEdu CPD provide the content stimuli, reflection space and support to encourage staff to think more creatively, adjust and adapt, and become inspired by and experiment with new thinking, new methods and new strategies.

Challenges

The new curriculum and pivoting education online due to the COVID crises, at a time when the world felt chaotic, was indeed a challenge. Yet,

the experience of working on CPD on a new platform, LoopMe, managing learning and reflection fully online, with some tutor support gave us firsthand experience of what the experience of our pupils would be like. For home learners, everybody's ICT skills have to up-level, educators and learners alike. It was easier for some and more difficult for others. By time the school was allowed to reopen after the first lock down eased, the staff faced new challenges such as working within the constraints of class bubbles. The staff had gained new pedagogic insight and were keen to put into practice in a physical setting. Constraints appeared, such as not being allowed to have two classrooms working together on the same project as would have been an obvious entrepreneurial learning endeavour, but the context further encouraged the staff to become even more creative, and to keep the group work going through Teams.

Nursery (three- to four-year-olds)

In the nursery, Mrs Faith Muldoon (Early Years) promotes resilience with help from the nursery rhyme 'Incy Wincy Spider' (origin unknown). Mrs Muldoon shared "For the children, to never give up, always get back up again, and to try, try, try, again has become a mantra to face ambiguity and challenge with perseverance and resilience". Quoting Rita Pierson, she explained, "if you say it long enough, it starts to be a part of you". She explained:

This little spider is really curious. He works hard, he takes risks, you know, but disasters sometimes happen sometimes. Sometimes Mother Nature wipes you out and you lay on the ground, you've had hurt, you've had a fright. You know, you have yourself a big cry, and that's perfectly okay. But you pick yourself up, you dust yourself off, and you try again. And that's what concepts like resilience and perseverance. This is what it looks like here at the first rung of the school.

Link: <https://twitter.com/amanwy/status/1403392529228304385>

In 10 days, Marshmallow was built from recycled materials and paper mâché and decorated. They give him a heart, a reason for being, a name, a job, a diet and special powers. The children also contributed to a people voice reflective scrapbook. The amount of language development that came out of this process was just phenomenal. It is about 40 plus pages long.

This is what the sort of foundations of collaboration look like. These are children that are still learning to play alongside each other. With a project like this, they're all in there. They're all in it together at various levels, pooling skills and working with different types of tools. When you map this into EntreComp petal terms, it's quite powerful to think how many skills and competences that these three- and four-year-olds have worked on during that project.

Foundation (aged five, and six)

Miss Tracey Singleton, Foundation Phase, embraced the entrepreneurial skills framework to also embed sustainable practices. During a walk following a lesson on plastics pollution the school children spotted a full bin of empty plastic milk containers. They set about repurposing their use to create value for both themselves and their local bird community. The class decided on recycling milk cartons to create bird feeders. This was a messy but fun process which they enjoyed fully and the birds loved them:

After discussion about developing our garden area the pupils spotted the opportunity to raise funds for this project – we would make and sell the bird feeders. We were using an app called Book Creator to make posters to advertise the product and took advantage of our social media platforms and school noticeboard to get the message across to others – the money raised was used to purchase plants and seeds.

Following EntreCompEdu training, the teachers decided to put the principles in to practice through a Curiosity Cube. This would offer several opportunities – vision, thinking skills, imagination, problem solving, generating discussions, reflection... The aim was to add an item to the cube and allow the children to look for clues about what it might be or what message it could be giving them. This was a highly successful addition to the classroom, with enthusiasm from the children when a new item was added, offering motivation for teachers to think of more challenging and obscure additions.

The competences and whole message behind the EntreComp programme fit seamlessly into the pedagogy and ethos of Foundation Phase teaching and learning. They endeavour to enthuse learners and engage them with opportunities and surroundings in a thoroughly cross-curricular approach. Working with others, taking the initiative, motivation and perseverance, learning from experiences – these competences are daily practices for their learners.

As a whole school, I feel that the EntreComp training has supported us in not only gaining more knowledge and understanding of the competences but also in acknowledging the successful and proactive teaching and learning opportunities we are already providing for our learners. Exploring the competences and delving in to what they actually mean for us as educators has enabled us to spot opportunities within our current practices and also highlight areas where we can incorporate the ethos of entrepreneurial learning across the school.

Rest of school examples

Even with their EntreCompEdu online graduation a pleasant summer memory, the staff at Dafen Primary School, not resting on their laurels, leapt into action to embed their enhanced entrepreneurial principles and practices as soon as the new Autumn term brought them back to school, taking school – wide entrepreneurship vision and learner competence development to new heights. An entrepreneurship cross-curricula extravaganza delivered to celebrate Global Entrepreneurship Week 2021 (GEW2021) at Dafen School put a light on the concrete transferability of the EntreComp framework in supporting the new Curriculum for Wales – developing enterprising, creative contributors, ready to play a full part in life and work.

For GEW2020, Dafen Primary embraced a breadth of exciting activities and projects that amplified the fact entrepreneurial concepts, competences and language can be confidently articulated throughout all learning environments and age-groups in school. Sustainability was their selected theme for a further conjoined affair.

Boxes of old CDs destined for the bin were the recyclable material of choice for the youngest learners. A series of tests carried out by the nursery children, to work through the properties of the CD and what could be successfully used to decorate them, fueled curiosity and experimentation. Collaborative building with loose parts gathered from boxes of junk led to further creative exploration and inquiry. An additional opportunity for perseverance and grit as the children problems-solved their way through the construction of the new decoration. A young team that now delight in being able to watch and reflect on their beautiful decorative light-catchers, as they twinkle in the sunlight.

The Foundation Phase set up a business to raise money for classroom resources. Inspired by the story, “The Squink”, and a concern for the welfare

of birdlife in their school swale, they voted upon the design and creation of bird feeders. Having spotted a full bin of empty plastic milk containers, they set about repurposing their use to create value for both themselves and their local bird community. Experimenting with bird mix recipes and production approaches, they worked through many entrepreneurial competences, including costing and pricing their bird feeders. They also worked on advertising strategies making use of digital books and social media.

Pupils of the Foundation Phase also committed to a sustainable production project – *recycled paper production*. As well as experimentation with process efficiency and paper quality, the group explored the wider value and benefits of recycling. Pupils had noticed how there was a lot of paper waste and although they were recycling the paper it was an area they wanted to investigate further. They researched ways to reuse old papers and came up with the plan to make paper of their own. Pupils worked together to plan their method and organise their resources and then they got started. Perseverance and Motivation – the paper might not have been as successful as anticipated but the pupils learnt to keep going, to look at the project from a different perspective, to cope with the perceived ‘failure’ and take something from that when moving forward with future tasks and projects.

Following a jam-board session to ideate and work together, the younger juniors also sprang into action with their very timely face mask project. 100% bespoke designs using recycled materials A clear package of spotting opportunities, developing ideas, planning skills, an awareness of limited resources and lots of collaborative learning.

An evaluation of collaborative ideas-sharing, the higher juniors contributed to entrepreneurial fever with their bespoke sustainable bunting. A joyful environmentally-friendly product to send to the local nursing home to brighten up their days. Pupils developed skills in planning and mobilising resources, they worked as a team to support each other in measuring and marking out the coverings before cutting the fabric to fit. They explored the real-world contexts and chose a project which was not only fostering sustainable goals but also relevant to their current daily life. This class also went to develop sustainable clay tile products to create and sell.

There was also a project to upcycle old t-shirts into an incredible creative range of bags, which drew on all manner of “Ideas and opportunities” – “Resources” and “Into action” competences. Pupils in year 4/5 shared ideas about how to engage with our local community. They wanted to create a product which would not only add value but foster a sense of sustainable

thinking too. They decided to upcycle old fabric in order to create bunting to brighten up the local care home – Ty Mair. This opened up lines of communication between the pupils, residents and staff which has since resulted in the school participating in ‘Grandparents Day’ where we made cards and sent gift packages to the residents. Both the residents and care home staff were greatly appreciative of the gestures. This encouraged a sense of pride and achievement in the pupils also. Further opportunities for engaging with local stakeholders came from Year 4/5 development of a green space in the school area – they worked together to create an allotment where they developed skills in planning and organising their resources and the area, working as a team to plant and take care of the allotment and a lot of perseverance and resilience was developed through taking care of the plants and helping them to grow despite the intermittent weather we have been seeing! The class received donations of plants and seeds from our local ‘Morrisons’ and also a small business ‘Stevie Bees’ – this supported pupils in developing thinking about product selection, profit and loss, money management. The intention is to sell produce when the crops and plants are harvested.

Year 5/6 collaborated to plan their challenge and share ideas about possible uses for the ‘old’ T-shirts. From this they chose to upcycle the T-shirts in order to create shopping bags – their goal was to develop a product which supported sustainable goals as well as being purposeful and a valued creation – no more plastic waste from throwaway shopping bags. Many skills were developed across the project – vision, planning and management, mobilising resources, creating value, spotting opportunities.

Beeswax Wraps – as part of our Lightbringers Project the pupils reached out to a local company – Dunelm to request the possibility of receiving offcuts or old fabrics at a reduced price. The result – the company was inspired by the pupils’ creativity and initiative and they donated reams of fabric to the school for free! Definitely a successful lesson in engaging with stakeholders and fostering relationships with the local community. From this, the pupils worked to plan and develop beeswax wraps – the idea was to create a product which would be reusable and reduce plastic or foil waste from packed lunches. With some adult support the pupils worked to melt the beeswax and use it to embed in the fabrics – the finished product looked great and works superbly!

Discussions

What is very clear from the hive of activity this GEW2020 is that entrepreneurial skills are not just fun to develop, but help pupils develop creative ideas that can solve local problems in better ways, and support with the skills development to turn those ideas into action. Analysis of data observation reveals an inspirational view of collaborative CPD. Further some of the data also reveal a pragmatic, occupational approach to entrepreneurship education (Kennedy, 2011) where the structure of the CPD framework (Decimone, 2002; Fischer et al., 2018) seems to have summed up the situation perfect that the new curricula, new entrant demands. It seems that the practical process is to be heading from conducive to collaborative endeavour (Kennedy, 2011).

It was magnificent that with all that sort of chaos going on, that the school was able to sort of pull together a sustainability themed a Global Entrepreneurship Week, within a very short space of time, testament to how embedded these skills are, because they did not really have to think about it was natural to them. The school was in a flow of being able pull on those competences with a whole-school focus. And come away with a whole suite of projects. This was not done in a piecemeal way: this is something that is actually demonstrating an in-depth and integrated build to their new curriculum development.

Macro lessons that were accomplished was Adopting Creative Learning, that aligns closely to the four purposes of the curriculum for Wales. It makes more active use of nature to bring learning from and out in the outdoors. It enhances the collaboration across classes and on whole-school projects. It improves a sense of well-being or working from the environment and getting personal and shared value from resolving problems through creativity. In addition it enhances more teaching staff collaboration. It applies more ambitious with use of new technology platforms to develop the competences.

Overall an entrepreneurial mindset for staff and pupils and an appetite to take an idea through to implementation, embracing failure and challenge was seen. More awareness of environment – local and global, what's going on in the world around them was recognised. The engagement with stakeholders and the local community was increased. In summary the foundation for the staircase to adopt entrepreneurial competences (Bacigalupo et al., 2016) is well laid down.

EntreCompEdu taught the staff how to make use of EntreComp to ‘receive’ relayed sustainability and creative projects like the Cymbrogi Lightbringers Project in a holistic way – now the entire school community continually builds on entrepreneurship, and entrepreneurial learning, further strengthening, as seen, month by month, week by week, the new curriculum build.

Stakeholder recognition

Dafen Primary School showcase how the collective engagement of developing creative, innovative, and risk-taking abilities into teaching practices has an amplifying impact upon implementation, energy, and confidence; fast tracking impregnation into the culture of a whole school. This contrasts with a more typical cascade approach to individual CPD opportunities, which can get diluted over time when faced with the obstacles of passing firsthand experience and learning and passion on to others in the workplace/educational setting.

- Gareth Morgans, Director of Education and Children’s Services Department at Carmarthenshire Council said he was impressed on the school’s wholehearted commitment to the new Welsh curriculum (UWTSD, 2021),
- Nia Griffith, Shadow Secretary of State for Wales, complimented the staff and pupils on their vision and resilience, recognising the power of the EntreComp skills framework, celebrating the breadth of value creation work pulling through all the year group presentations adding: “respecting the planet, and integrating the ethical and social, all phenomenally important, not to mention a clear focus on getting things done.” (UWTSD, 2021),
- Lee Walters, Deputy Minister for Climate Change noted the skills the pupils have developed like curiosity and goal setting aren’t just fun but will help them to become confident problem-solvers for the rest of their lives. An exceptional achievement for the school after such a difficult year (UWTSD, 2021).

Whole-School CPD

Whole-school CPD with online facilitated support is not only efficient, but powerful and impactful. Staff had a high level of interaction with a global population of learners and facilitators on the online learning platform. It became a safe and welcome, yet inspiring space that helped educators through COVID and long-term curriculum implementation. The opportunity for staff to share their stories and to have some personal reflection time, which is done in the personal space, then that opportunity to think wait and see the community as a global entity, when they were thin, confidential web to share their stories ease with people at the other side of the world was key. And not just only within their context as a primary educator. On the forum, primary teachers engaged and exchanged with secondary and HE educators, and the voluntary sector, drawing from all sorts of disciplines from AI and technology to poetry and geography. A cross cutting interactive, professional exchange which inspired and supported a growth entrepreneurship growth mindset.

It was also important that they were able to build upon rather than brush aside all their experience and skills to date. EntreCompEdu encouraged participants to recognise and embrace their good pedagogy and practice, and then build on it through targeted competence growth collectively engaged. It's important that people can draw on their experiences and reflections to support that ongoing journey collaboratively. Mrs Michelle Davies, Key Stage 2, added:

We were introduced to EntreComp and Entrepreneurial Learning in a primary school context. Key takeaways for me was the advantages of a reflective and experiential pedagogy, and that entrepreneurial learning, tapping into creative experimentation, is not purely focused on financial or enterprise activity, but opens up much broader value creation that includes the cultural and the social.

Summary

The case study in Dafen school represents a successful whole-school experience of EntreCompEdu continuing professional development programme (CPD). It represents how collaborative adult learning (Drago-Seversson, 2009, 2016) and collective engagement of developing creative, innovative, and risk-

taking abilities into teaching practices (Grigg, 2020) has an amplifying impact upon implementation, energy, and confidence; especially influencing the entrepreneurial practice and culture of the whole school. The EntreCompEdu continuing professional development project was introduced to Dafen School in Wales at almost the same moment as the Covid-19 lockdown began in Wales, with the purpose to introduce teachers the entrepreneurial competences that they need in order to follow the new curricula. Firstly, it responded to the call for the professional development that connects the teachers' everyday practices (Avalos, 2011; Clarke & Hollingsworth, 2002; Borko, 2007). Secondly, it served its purpose for teachers in processing the new Welsh curricula in the most effective (Drago-Seversson, 2009; 2016) and cost-efficient way (Li & Dervin, 2018).

Analysis of case study results reveals EntreCompEdu as an inspirational channel of collaborative CPD, yet it was pragmatic, taking an occupational approach to EE (Kennedy, 2011) where the structure of the CPD framework (Decimone, 2002, 2009; Fischer et al., 2018) seems to have summed up the different demands placed on the school and its teachers through the twin challenges of the new curriculum for Wales and the onset of Covid-19. It seems teacher development (Ben-Peretz, 2001) in entrepreneurial competences was conducive to building collaborative endeavour (Kennedy, 2011).

This study reinforces previous evidence that teachers' professional development in entrepreneurship education creates a double loop of teachers' collaborative adult online learning and collective engagement under prevailing pressures from new entrants; curriculum reform by Wales government and the school Covid-19 lockdown (Drago-Seversson, 2009, 2016). The appropriately designed online EntreCompEdu professional development programme (Decimone, 2002, 2009; Fischer et al., 2018) further enhanced an appetite for 'facilitated' entrepreneurial learning of individual EE skills (Ruskovaara et al., 2014, 2016) and supported collaborative work on new ways of thinking about those skills (Weiner & Lamb, 2020). The online support facilitated CPD even during a time of crisis i.e. the long term COVID lockdown. It celebrated the gains to be made from whole-school CPD online opportunities. In addition, it initiated a creation of long-term professional network between schools and the 'university'. It enforced the collective engagement, and collaborative learning among teachers (Drago-Seversson & Blum-DeStefano, 2014; Lamb & Weiner, 2020) with full headteacher support (Ruskovaara et al., 2016). Last but not least, it underlined the limitless potential for entrepreneurial practice capture and dissemination, that warrants further research studies.

EntreCompEdu continuous professional development stands as a powerful tool to bring together new curriculum, sustainability and entrepreneurial agendas. It enhances the strengthening of entrepreneurial culture, laying good foundation for learners. Teacher Ms S. said:

Making use of the EntreComp Framework, an entrepreneurial learning approach to curriculum design supported by the EntreCompEdu CPD framework was a perfect solution to help us target and unlock the 'creativity and innovation', 'critical thinking and problem-solving', 'personal effectiveness', and 'planning and organising' potential of learners, as expressed in the new curriculum.

At the start, school leadership saw the EntreCompEdu training as an opportunity to strengthen creativity and innovation, and adaptation to new demands of Welsh curricula, functioning as a positive internal driver for volunteers to commit and complete. For the 8 staff who elected to join EntreCompEdu first, it was possibly an act of blind faith, but early collaboration reinforced the engagement through a shared goal led to early cross-class communications and support.

One-third of the way into the CPD, the groundswell of activity, conversation, and energy surrounding the journey led to the remaining staff joining despite the pressures of Covid-19. A whole-school approach had a powerful impact in shifting the entire school into entrepreneurial learning as a guiding principle. At Dafen, each pupil now knows what the word entrepreneurship means, through taking a chance via creative, innovative, and risk-taking learning concepts.

In the end the Global Entrepreneurship Week at Dafen School shone a light on the concrete transferability of the EntreComp competence framework. Dafen School is the first school that has collectively 'Taken a Chance' on CPD and been awarded 'EntreCompEdu Pioneer School' status to celebrate its entrepreneurship cross-curricula extravaganza.

Limitations

As Dafen school represents only one organisation under the umbrella of the new Welsh curricula, it depicts only one single successful case of impact of the teachers' professional learning programme of EntreCompEdu on entrepreneurship education and entrepreneurial competences. Second the school is rather small in size, and this should be taken into consideration.

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