



EXECUTIVE SUMMARY

1. Introduction to the project

The **Dual Higher Education Project (DHEP)** – as a directive of the Cape Higher Education Consortium (CHEC) – has been launched to explore the applicability of a dual higher education (DHE) model in South African higher education by initiating innovative and collaborative partnerships between universities and industry. This pioneering project therefore aims to conduct pilot work on and ultimately develop DHE as a specific curricular model for the delivery of academic programmes by all universities – including traditional, comprehensive and universities of technology.

Funded by the National Department of Higher Education's (DHET) University Capacity Development Grant (UCDG), the outcomes of the project are three-fold:

1. Contribute to the University Capacity Development Programme's (UCDP) goal of transforming university curricula in South Africa to be more responsive to the contextual challenges graduates face when it comes to employment opportunities and workplace success. This includes:
 - *Whole development of students and graduates*
 - *Enhancing the capacity of teaching staff at universities*
 - *Building stronger university-industry links*
2. Provide a more coherent approach to workplace-based learning (WPBL) and contribute to the WP-PSET's key policy goal of improving relationships between education and training and the world of work.

3. Support the goals and outcomes of the National Skills Development Plan 2030 with an emphasis on empowering education and training institutions to develop appropriate interventions (in collaboration with industry) to address the demands of the future labour market and skills development.

2. Initiation and commencement

The initiation of the **DHEP** stems from a high-level delegation from Germany that visited South Africa – and particularly the Western Cape – in 2017 to discuss possibilities of cooperation within the regional higher education sector. Led by the State Ministry of Science, Research and the Arts Baden-Württemberg, the delegation included some 15 university presidents and rectors, as well as representatives from German industry.

It was during this visit that the idea of pilot work on DHE provision in South African higher education (was born, based on the model of dual studies followed by various universities in Germany and Austria, including the Baden-Württemberg Cooperative State University (DHBW). With a keen interest in the project, the German Ministry of Higher Education and German Embassy in South Africa has furthermore requested the DHBW and the Osnabrück University of Applied Sciences to work together to promote DHE programmes in South Africa.

Following the delegation's visit, a workshop on DHE was held at Stellenbosch University (SUN) in March 2018 where it was agreed that CHEC would take the directive to develop a proof of concept.

As a result, with the DHET's vested interest, a full proposal was developed to launch a project that would explore the applicability of dual studies (or then DHE) in the South African context. The project proposal has consequently been approved and officially commenced on 1 June 2020.

3. Defining DHE in the South African context

For the purpose of the **DHEP**, dual higher education (DHE) can be conceptualised as:

The DHE model involves two distinct "places of learning", namely: (i) university (conceptual or "classroom" setting) and industry (contextual or "workplace" setting).

In the classroom setting, students learn and engage with the theoretical and/or procedural knowledge of a specific discipline, while in the workplace setting, they acquire practical experience and must reflect on their theoretical knowledge by identifying and applying some of these acquired aspects. The industry or practical phase is also a credit-bearing part of the academic programme and is supervised – very much like learning in the classroom. Students are inevitably guided on the learning path to reflect on the relationship between theory and practice, and are then assessed by both industry and university staff.

The careful blend of theory and practical know-how in the curriculum of DHE programmes is therefore meant to provide a basis for preparing students to solve complex problems in real work contexts. As such, the DHE model has some similarities to current models of cooperative education and work integrated learning (WIL) as applicable to the South African higher education sector, but it also exhibits some distinct differences that renders it unique.

A key assumption of the project, however, is that the DHE model should be explored as a curricular model in its own right and not simply as an advanced form of WIL.

The intention is ultimately that a DHE programme will represent a particular manifestation that combines learning in a university and a workplace setting with design characteristics that neither assimilate an advanced form of WIL nor replace WIL, but rather as a specific and alternative curricular model for programmes with strong industry–workplace links.

Some distinguishing features of the DHE model – which the project intends to explore further – include:

- *Industry responsibility for the study programme.* Dual higher education programmes are designed in consultation with industry and registered as university programmes, with students entering into formal contracts with an employer before being able to access their study programmes. Universities work closely with partners from industry and, where appropriate, professions, to provide students with opportunities to learn on a rotational basis at both the university and in the workplace with significant and regular practice phases. Industry co-finances the workplace learning phase of the curriculum, which, in turn, can possibly generate an additional stream of funding for universities.
- *Learning time in the classroom versus the workplace setting.* The design of an DHE programme allocates a greater portion of time to learning activities in the workplace than most programmes currently provide for (e.g. WIL components). While a balance of 50/50 theoretical learning in the classroom versus practical learning in the workplace may be seen as a starting point for the weighting of the two components, it is not prescriptive and must be determined according to each specific programme's requirements.
- *Credit weighting.* On average, the credit weighting between theory and practice is about $\frac{2}{3}$ theory and $\frac{1}{3}$ practical work. As the practical phase is part of the study and scientifically supervised by

university staff, this phase is involved in the awarding of credit points. As such, the practical component of the study programme should be a subsidy-bearing component because it is a fully integrated part of its academic activities and requires significant consideration by the university, involved.

4. Rationale of the project

The DHEP is mainly driven by two main trends in higher education, namely:

(i) *building opportunities for better graduate employability*; and (ii) *strengthening links between higher education and industry in South Africa*.

Youth unemployment, amidst generally high levels of unemployment in South Africa, are increasing at an alarming rate. Low and skewed participation rates in postsecondary education, as well as a continuous mismatch between university programmes and the expectations of employers are some of the challenges that young people face in their work-seeking endeavours. What is more, the realities of the new era of a digital society and economy – i.e. the Fourth Industrial Revolution (4IR) – herald major changes in the world of work that necessitate a far closer relationship between universities and industry when it comes to curriculum design and delivery.

The DHE model presents an approach to curriculum transformation that supports employability through its combination of theory and practice. Within this model, employability is approached from the perspective that knowledge and skills relevant to a specific field of competence should also be developed alongside a range of graduate attributes commonly referred to as “soft skills”. Consequently, students should be able to develop attributes or skills such as collaboration with others, critical thinking, synthesising different knowledge contexts, applied problem solving and adjusting to a specific work culture.

The restructuring of higher education in South Africa after 1994 has been marked by major changes in the relationship between industry and universities – and there are many reasons for this – but none more so than the conversion of qualifications at the previous technikons to degree programmes at what is now known as universities of technology. The weakening of industry links, as seen in the reduction of the credit value of WPBL, is a new development following the national recurriculation project of 2008 to 2016 (and still on-going in some sectors). For all academic programmes in all universities, however, the inclusion of internships and more formal forms of WPBL are largely dependent on whether a professional council or body is involved and what their requirements are for accreditation.

It is therefore more important than ever to explore the development of curricular models that expose students to workplace contexts in a more systematic and regular manner – without these models necessarily being linked to specific institutional types. It is also important to note that a range of practices that relate to WIL, such as WPBL, internships and other forms of simulated work-based learning are continuously evolving and changing. The strengthening of university–industry links further presents clear advantages to industry partners in that the DHE model can be seen as contributing to their own competitiveness, both nationally and internationally.

Students' theoretical knowledge brings new ideas to industry and serves as a catalyst to improve existing practices, while providing industry with opportunities to make more informed decisions on the recruitment of students as part of their talent management efforts and sustainability for the future. Additionally, DHE programmes often integrate university knowledge into their businesses and frequently stimulate further cooperation in R&D and business development.

5. Main features of the project

The DHEP consists of six main features, namely: (i) *research*; (ii) *development of DHE models*; (iii) *policy restructuring*; (iv) *capacity development*; (v) *pilot implementation*; and (vi) *cross-cutting evaluation*.

Research

- Research the South African higher education environment, institutional support structures and practices that are conducive to DHE, including institutional planning and policy provisions, as well as capacity for curriculum design and implementation.
- Compare the curriculum structure, practices and accreditation systems of Germany with the South African higher education sector.
- Investigate the industry as graduate employers and their abilities and/or requirements to participate in DHE, including the role of SETAs in facilitating and brokering links between universities and the labour market to support student participation in DHE.

Development of DHE models

- Develop one or more specific models for the integration of a DHE approach into higher education programmes
- Analyse the DHE model's potential for professional education in collaboration with professional bodies.

Policy restructuring

- Assess implications of the DHE model for programme approval, accreditation, and government funding.
- Recommend specific policy restructuring to the DHET that sanctions the implementation of the model.
- Facilitate the development of evaluation and quality assurance measures to govern the DHE model.

Capacity development

Develop the capacity of:

- Industry partners to implement the model through supervisor training and requirements for DHE; and
- Universities to incorporate the model into the curriculum through academic staff development, redesigning curricula and developing appropriate mechanisms for monitoring, evaluation and assessment in both places of learning.

Academic staff need to learn how to design curricula in partnership with industry partners, and to develop appropriate mechanisms for monitoring and evaluating (assessing) student performance during their placements. Universities will also need to train staff with dedicated responsibility for WPBL facilitation.

Pilot implementation

- Select two or more programmes from each university to be restructured according to the DHE model.
- Implement the model in collaboration with industry partners.

Cross-cutting evaluation

- Evaluation cross cuts all phases and features of the project and done by an external evaluator who works closely with the Project Team (see par. 6 and Figure 1).
- Develop an evaluation plan to monitor goal achievement.
- Assess the potential of the DHE model to complement other higher education frameworks that empower youth development and employability.
- Assess the relationship between higher education sub-frameworks that incorporate strong workplace-based components.
- Explore similarities and differences in curricular characteristics.

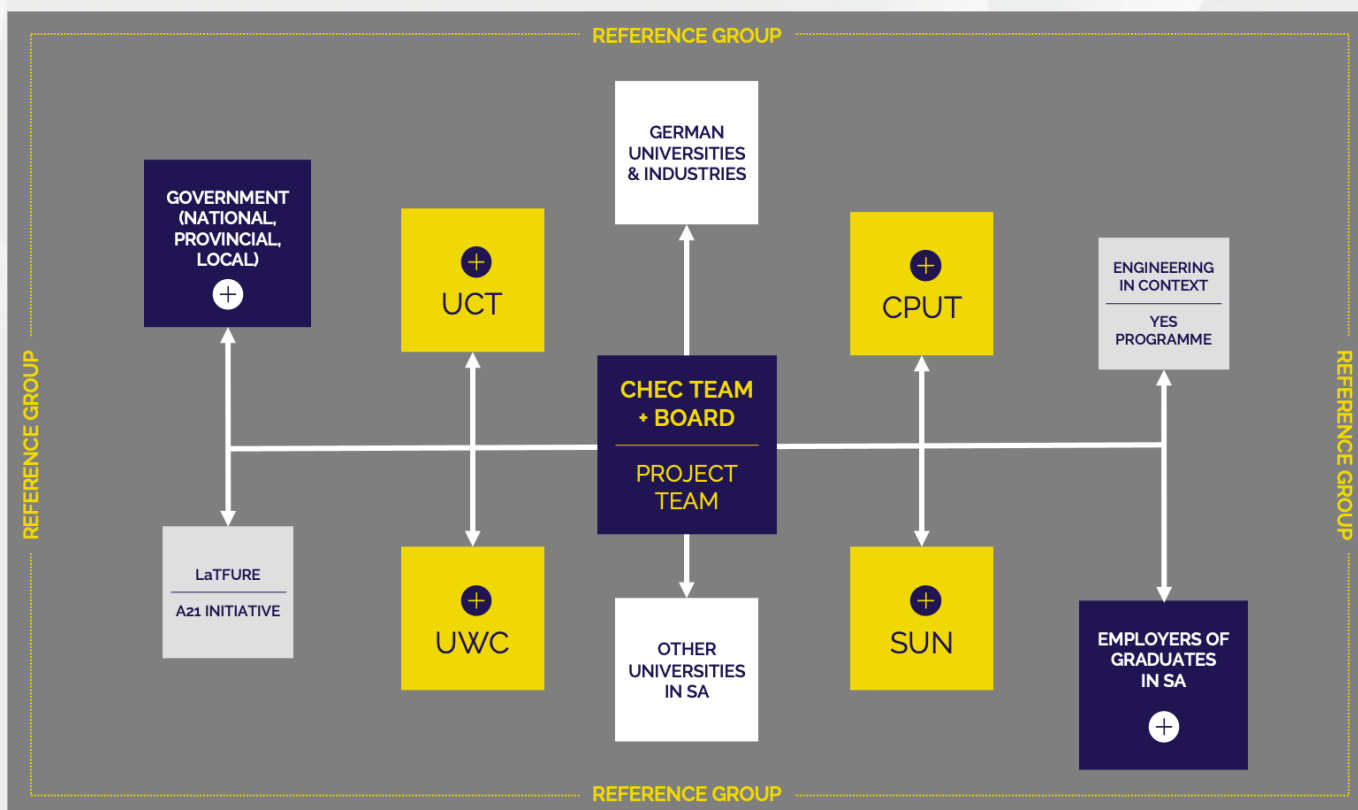


Figure 1 Key role players and decision makers (Project stakeholders)

The dotted line represents the Reference Group – this any interested group that does not participate directly, but supports the project, benefits from the project or a catalyst that enables the project.

The potential of using this educational model will also be assessed to complement the national drive to provide one-year internships to young people (i.e. the YES initiative), with the opportunity to study one-year National Education Framework (NQF) Level 5 programmes in areas such as Business Management, Hospitality Management and Information Technology, amongst others.

The relationship between qualifications on NQF Levels 5 to 8 will further be assessed where a strong workplace-based component is incorporated on the Higher Education Qualifications Sub-Framework HEQSF and the Occupational Qualifications Sub-Framework (OQSF). Qualifications on the OQSF consist of three components or modules, namely: (i) *knowledge*; (ii) *practical skills*; and (iii) *work experience* (i.e. WPBL).

The **DHEP** will therefore explore whether there are clear and significant curricular characteristics that distinguish qualifications on the HEQSF that follow a DHE curricular model from occupationally-directed qualifications on the OQSF.

6. Roles, responsibilities and key stakeholders

In alignment with the UCDP, the **DHEP** is embedded in “partnerships that create resources that can be used across the system to promote the goals of the UCDP”. Under the auspices of CHEC, the four public universities in the Western Cape form a longstanding consortium of cooperation and association that will be employed to explore and pilot an innovative model of curriculum transformation in South African higher education. The four universities are:

- Cape Peninsula University of Technology (CPUT)
- Stellenbosch University (SUN)
- University of Cape Town (UCT)
- University of the Western Cape (UWC)

Additionally, and apart from partnering with two similar local projects that were recently concluded and generated a lot of relevant knowledge about exactly such a model – LaTFURE and Engineering in Context – CHEC will also be partnering with:

- Two German universities that have been implementing the model for the last 30 years
- Western Cape Government (WCG)
- City of Cape Town
- National government departments and institutions
- Professional bodies

CHEC's overarching role is to provide oversight, administrative and financial management, as well as logistical support for all the project activities in collaboration with the lead university on the project, CPUT. CHEC's current structures and human capital will be extended to provide for this role, but will limit the additional appointment of staff for the sole purpose of the project.

Paid roles will sign service level agreements (SLAs) and financial management of the project will follow the DHET's prescribed Standard Operating Procedures (SOPs). Provision will also be made for external auditing of the project funds in line with CHEC's current arrangements for annual financial audit requirements.

CHEC's CEO will provide project oversight to some extent, network with stakeholders in government and industry, and attend/co-chair meetings of the Project Team in collaboration with the Project Director. This is to ensure continuity and consistency, but importantly also provide feedback to the DHET through the office of the Vice-Chancellor of CPUT.

The roles and responsibilities of the key stakeholders of the project are set out as follows:

Project Team (incl. Core Team)

The Project Team, headed by the Project Director (**Dr Antoinette Smith-Tolken**) has been established to be comprised of at least two members from each university, experts in the fields of WIL, DHE and policy formulation, as well as representatives from industry (employer) networks.

The Project Director takes the primary responsibility of managing of the project viz. communication, coordination and execution of the project processes in collaboration with CHEC's CEO (**Prof Martin Oosthuizen**). A small core team consisting of the CEO, Project Director, Research Coordinator (**Dr Sharman Wickham**), Stakeholder Relations Coordinator (**Mr Estian Behrens**) and International Advisor (**Prof Josef Gochermann**) assists in the day-to-day decision-making processes of the project.

The core team will commission research where necessary and create the necessary human capacity for the project. The core team will report to the Project Team on a regular basis (at least once in two months) to ensure that all stakeholders are on board.

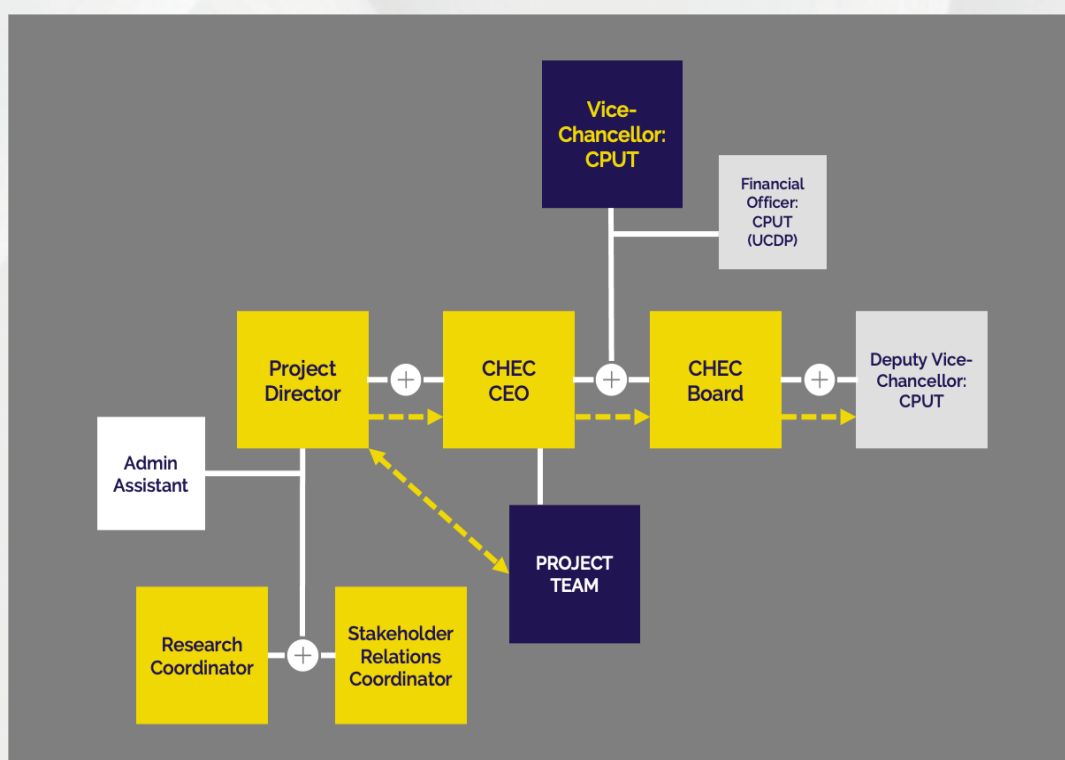


Figure 2 Roles and responsibilities of key project members

Together with the Research Coordinator, the Project Director will also undertake a study on DHE to ensure that existing knowledge on the model and related models is integrated into the planning and execution of the project. Each university will also be assisted by the Project Team to restructure participating programmes in line with the policy provision for the project.

International Advisor

At the request of the Vice-Chancellor of the DHBW, **Prof Josef Gochermann** (Institute for Dual Studies at the Osnabrück University of Applied Sciences, Germany) has offered to serve as an expert advisor on the Project Team. During the development of the project proposal, Prof Gochermann has advised the team on exploratory studies on DHE in Gauteng and the Eastern Cape that he has conducted with a co-researcher.

He serves as the liaison with German universities and industries in South Africa, as well as the universities with which he has previously collaborated on DHE. He will take the lead in ensuring the transfer of curricular, industry and practical knowledge gained from the German experience and assist in developing specific industry relations in South Africa.

Western Cape universities

Each of the four public universities in the Western Cape will have at least two representatives on the Project Team. These representatives will identify the main role players in their respective universities who are responsible for academic planning and quality assurance, as well as possible programmes and project champions that are willing to participate.

Additionally, a cohort of collaborators who will take the lead in creating awareness, develop capacity for DHE and assist in the identification and support of pilot programmes will form an important part of the project's success.

The Project Director will work closely with each of these cohorts to ensure that executive management, academic leadership and quality assurance structures are on board and support the programmes that ultimately participate in the project.

LaTFURE

Dr Seamus Needham will take the lead in advising the project on policy restructuring and requirements for curriculum development drawing from the work done on the LaTFURE project. The project specifically targets the revision of the Policy Framework for Workplace-Based Learning in an Integrated and Differentiated South African Post-School Education and Training System of 2015. His role is also to further ensure that the insights gained from the Tourism and Mining programmes on LaTFURE inform possible pilot programmes of the **DHEP**.

Engineering in Context

Prof Chris Winberg will take the lead in advising the **DHEP** on policy restructuring and requirements for curriculum development based on insights gained on the concluded Engineering in Context project.

Project Advisory Committee

A Project Advisory Committee (PAC) will be established that consists of both university and industry representatives that will govern and advise the choice of academic programmes, the curriculum restructuring and implementation of the pilot programmes. This will ensure collaborative network learning, monitoring and success of the chosen pilot programmes.

Reference Group

While the project research will be based in the Western Cape, CHEC will follow a consultative process to constitute a project Reference Group (*see also* Figure 1) that may consist of key stakeholders from the four

universities, provincial and local government, national policy and regulatory bodies (e.g. DHET and the Council on Higher Education [CHE]), the national and local business sector, as well as representatives from both the South African higher education sector and international universities.

The Reference Group will exercise a governance role on the project – guiding project planning, implementation and communication. It will also serve in an advisory capacity to ensure that the interests of all stakeholder groups are represented and to secure their commitment throughout the process.

7. Processes and methodology

The **DHEP** will follow a mixed methods approach that includes all facets of working towards the implementation of a new model of DHE that is specifically customised to the South African higher education sector. This approach will consist of:

- *Knowledge transfer from contexts where a DHE model has successfully been implemented.* Apart from work that has been done by other South African projects on DHE approaches and pedagogies that promote engagement between theory and practice, the German and/or Austrian models – including the knowledge that has been created within all the dimensions of these models – will be carefully studied and integrated.
- *A broad environmental scan of the industries that employ graduates in South Africa.* This will be paralleled with the study fields that serve these industries. A further study of the industries in the Western Cape and their preferences and requirements for the employment of graduates will be conducted based on a study already done in Gauteng and the Eastern Cape by the Osnabrück University of Applied Sciences. International university partners have undertaken to identify and recruit German companies that are operating in South Africa that

are interested in collaborating with the project.

- *A study tour to Germany and Austria to gain insights to the practical implementation processes of the DHE model.* This will also be extended to how these processes may be adopted in South Africa. Technical aspects such as how the knowledge properties of specific learning programmes are incorporated into curricula, how curriculum design facilitates the DHE model and more practical aspects, such as student transport, stipends and supervision of students, will be closely studied to evaluate their applicability in the South African higher education context.
- *Collaboration with professional boards (incl. Germany).* This knowledge will be used to initially build the capacity of the four universities in the Western Cape and later compile a training manual for South African universities in collaboration with the LaTFURE project, for example.
- *Building on the LaTFURE project.* This will be done through a series of pilot studies to determine the conditions for the successful implementation of DHE programmes in South Africa, together with a comparative curriculum analysis of similar programmes in Germany and South Africa (e.g. Social Work and Engineering). The focus will be on identifying catalysts and barriers in the South African system that may facilitate (or prohibit) the successful implementation of DHE programmes.
- *Appreciative inquiry will be used to explore innovative ways to determine the capacity of universities to implement and support DHE.* This also includes curriculum restructuring in deliberation with the Project Team, PAC, Reference Group, professional board representatives and current workplace partners working together towards the **DHEP's** success.

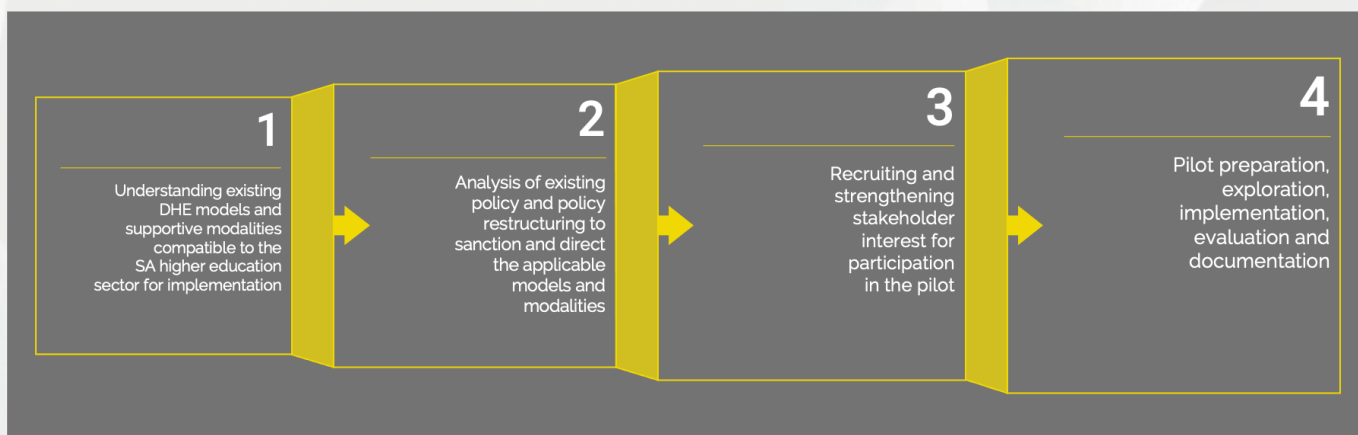


Figure 3 Building the project in four dimensions

- *Industry engagements will be facilitated to identify potential industry partners and create awareness of the DHE model amongst industries who are not familiar with the concept.* CHEC will concurrently have regular meetings with business and employer networks that are already being established, including Accelerate Cape Town, WESGRO, Cape Town Chamber of Commerce, City of Cape Town and the Western Cape Government, to assist with the integration of industry into the pilot project.

8. Implementation and work packages

In addition to the mixed methods approach, the **DHEP** will follow an agile approach in its planning and implementation. This implies that phases of the project are planned in a sequence, but the implementation of the phases may overlap and/or align to any preceding phase. A window is kept open until the completion of the preceding phase to revisit the planning of the next phase to ensure that it is aligned to the knowledge that has been gained. The timeframes, resources needed and budget are indicated in the respective work packages of the project. The work packages are summarised as follows:

Work Package 1:

Mapping the South African industrial landscape re potential employment opportunities

During this work package, the **DHEP** aims to determine the broader industry landscape within which it takes place. Taking 4IR into account, it will conduct an environmental scan of the employer landscape within South Africa to determine which major industries, SMMEs as well as entrepreneurial opportunities in selected occupational fields exist in South Africa and what the current trends are in the employment of graduates in these industries. The study includes 4IR projections of the world of work and which industries specifically demand industry-driven higher education.

Work Package 2:

Research on DHE

This work package focuses specifically on the study of DHE theory, current practices of DHE from a university perspective (incl. international best practices), as well as southern African case studies that relate to practice-orientated and workplace-based education that may inform a workable DHE model in South Africa.

Work Package 3:

Overarching stakeholder development and engagement

During this work package, the **DHEP** aims to build a continuous, nurturing and strengthening stakeholder relations platform for all those involved and who may benefit from its successful implementation. This includes the development of a stakeholder database, monitoring and exploring

interfaces and building upon other projects in the field of DHE.

Work Package 4:

Industry/employer partnership development and training

This work package focuses on creating awareness, building relationships and soliciting collaboration with industry partners. This includes the exploration of requirements for industry and employers' participation, commitment to the DHE model's implementation, as well as training needs for student supervisors and mentors.

Work Package 5:

University capacity development aligned with policy restructuring

The purpose of this package is to work closely with the four Western Cape universities to institutionally support the DHE model, thereby developing their capacity to implement DHE and providing guidance and training in restructuring and/or rearticulating current qualification offerings to follow a DHE model.

This includes facilitating the interaction between the DHET's qualification frameworks and universities, policy formulation and government support for the DHE model.

Work Package 6:

Pilot programme implementation and documentation

This work package mainly focuses on the implementation of the DHE model in the four Western Cape universities, with provision for participation by other universities South Africa in the later stages of the project implementation phase. The PAC will advise university cohorts on challenges that may arise through implementation. The implementation will be carefully documented regarding best practice and challenges.

Knowledge gained during the implementation phase will be applied to update training interventions for industry and universities, as well as recommendations for the revision of policy frameworks where necessary.

It is estimated that the project will initially take three to four years to reach the end of the pilot implementation phase. Limited wider implementation of the DHE model is included in the planning of the project, but a roll-out across the country is projected to manifest in a follow-up project of an additional two years. The **DHEP** will, however, create a foundation for the further implementation of DHE in South African higher education.

