



Final benchmarking report (incl. supply and demand results) and recommendations

Project Acronym:	LaTFURE
Project full title:	LaTFURE - Learning and Teaching Tools Fuelling University Relations with the Economy in Mozambique and South Africa
Project No:	573579-EPP-1-2016-1-AT-EPPKA2-CBHE-SP
Funding Scheme:	Erasmus+, CBHE
Coordinator:	DUK – Danube University Krems/Donau Universität Krems
Work Package:	Act2.6

Abstract	Report of national policies in South Africa, Mozambique and European countries that pertain to dual learning.
-----------------	---

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Report on Benchmarking of Institutional Frameworks and conditions for Establishing Dual Study Programmes

Authors

Prof Patricio Langa (UWC)
Dr Dorine Lugendo (UWC)
Mr Seamus Needham (UWC)
Dr Attila Pausits (DUK)
Dr David Campbell (DUK)
Dr Sigrun Nickel (CHE)
Mr Raimund Hudak (DHBW)
Dr Georg Wagner (FHJ)
Ms Angela Fernandez (UEM)
Mr Adriano Felix (UL)
Mr Pedro Massinga (UZ)
Ms Lauren Daniel (CPUT)
Mr Clinton Birch (WITS)
Ms Duduzile Magazi (WITS)
Mr Jabu Makhubela (ULP)
Dr Edson Charikinya (UCT)
Prof Phindile Lukhele-Olorunju (UMP)
Dr Jussi Kivisto (UT)

Document control sheet

Title of Document:	Final Report on Benchmarking of Institutional Frameworks and conditions for Establishing Dual Study Programmes
Work Package:	WP2 Activity 2.6
Last version date:	Monday 9 April 2018
Status :	Final
Document Version:	V. 5
File Name	LaTFURE WP2 Benchmarking Report v5 – April 2018
Number of Pages	62
Dissemination Level	Whole LaTFURE Group

Versioning and contribution history

Version	Date	Revision Description	Responsible Partner
v.1	20/11/2017	First draft	UWC Seamus/Needham Patricio /Langa Dorine/Lugendo
v.2	13/12/2017	Second draft	UWC
v.3	8/02/2018	Third draft	UWC
v.4	4/04/2018	Fourth draft	UWC
v.5	9/4/2018	Final draft	UWC

Abstract

An initial outcome of this LaTFURE benchmarking report that forms Activity 2.6 of Work Package 2 is comprehensive report of national policies in South Africa, Mozambique and European countries that pertain to dual learning. While dual learning is an established tradition within European partner countries, national policies in Mozambique and South Africa do not use this term and instead use ‘professional education’ and ‘work integrated learning’ respectively. A second outcome of this benchmarking report is an institutional report on the extent to which partner institutions are engaged in dual learning and a benchmarking report that shows comparisons between institutions and areas of learning where dual learning practices are in place. Incentives and challenges faced with the implementation of dual learning are also discussed.

A final outcome of the LATFORM benchmarking report is a report on the results of university engagement with industry on the extent to which industries value current university graduate knowledge and capabilities to enter tourism and mining industries. This engagement also provided an indication of industry’s willingness to partner with universities in dual study programmes, the results of which were generally positive.

Key words: LaTFURE, Dual Learning, University Industry Engagement

Acronyms

CHE	Centrum F. Hochschulentwicklung (Germany)
CPUT	Cape Peninsula University of Technology (South Africa)
DHBW	Duale Hochschule Baden-Wurttemberg (Germany)
DUK	Danube University Krems (Austria)
FHJ	FH Joanneum (Austria)
LaTFURE	Learning and Teaching Tools Fuelling University Relations with the Economy in Mozambique and South Africa
UEM	Univesidade Eduardo Mondlane (Mozambique)
UCT	University of Cape Town (South Africa)
UL	University of Lurio (Mozambique)
ULP	University of Limpopo (South Africa)
UMP	University of Mpumalanga (South Africa)
UWC	University of the Western Cape (South Africa)
UZ	University of Zambeze (Mozambique)
WITS	University of the Witswatersrand (South Africa)

Table of Contents

1.0	Introduction.....	6
1.1.1	Objectives.....	7
1.1.2	BENCHMARKING RESULTS.....	8
2.1	Defining Dual Studies.....	9
2.1.1	Definitions of dual programs in LaTFURE project countries....	9
2.2	Regulation of Work Placement within Study Programmes.....	11
2.3	Support and Accreditation Regimes Regulating Work Placements within Study Programme.....	14
2.4	Disciplines and Institutions offering Dual Programmes.....	17
2.5	Current Position and Future Development of Dual Programs in the National Systems.....	21
2.6	Barriers to Future Development of Dual Programmes.....	26
3.1	Surveyed programmes.....	27
3.2	Nature of relations between institutions and corporate partners.....	27
3.3	Managing the cooperation with corporate partners.....	32
3.4	Quality management system regulating work placement.....	36
3.5	Financial Participation by Corporate Partners.....	38
3.6	Composition of Dual Programmes.....	39
3.7	Scheduling of Workplace and University Learning.....	41
3.8	Comparison of Traditional and Dual Programmes.....	43
3.9	Current Position and Future Development of Dual Programmes.....	44
3.10	Barriers to Future Development of Dual Programmes.....	46
4.0	Study on the Demands and Expectations of the extractive and tourism industries in Mozambique and South Africa.....	49
4.1.1	TOURISM AND HOSPITALITY.....	49
4.1.2	EXTRATIVE MINING INDUSTRY.....	54
5.0	Discussion and Conclusion.....	55

1.0 Introduction

The LATFORM Benchmarking Report, which marks the completion of activity 2.6 of Work Package 2 aims to provide key information necessary for an initial benchmarking of systemic policies and institutional policies and practices that can be aligned to the concept of dual learning across the 16 partner institutions within Europe, Mozambique and South Africa. The participatory methodology employed to obtain this information that provides a platform for further knowledge engagement in dual studies policies and practices is outlined below. As the lead partner for this project, the University of the Western Cape (UWC) contacted the South African Department for Higher Education and Training to assist with collation of all national policies that affect or impact on the potential implementation of dual study programmes in South Africa. A similar process was undertaken by the lead university for Mozambique, Universidade Eduardo Mondlane. Within Europe, various universities and the Centrum f. Hochschulentwicklung provided national policies on dual studies as these vary across and within Austria and Germany. The University of Tampere provided critical information of Finland's national policies.

UWC then requested all sixteen partner institutions to complete a questionnaire (attached to this report) that outlined institutional responses and practices of dual studies. Mozambique and South Africa do not currently implement formal dual studies as understood in the European context and universities in the South described their involvement in professional education and Work Integrated learning respectively. Universities were also asked within this questionnaire to identify opportunities and challenges with respect to the implementation of dual studies in the tourism and mining industries.

A further process was undertaken whereby all partner universities in Mozambique and South Africa were asked to engage with local and national industry stakeholders to assess industry's perceptions of current qualifications offered and to evaluate the extent of industry's willingness to work with universities on the development and implementation of dual study programmes in Tourism and Mining extraction industries and the funding of students in these programmes.

All information received from the national policy level, institutional questionnaires and industry surveys was collated into a single benchmarking report by UWC as the lead partner and sent to partner institutions for further comment. The benchmarking report has undergone 5 iterations with constant communication between partner institutions on information gaps and clarification of key concepts. As can be seen from the list of authors, the methodology employed was to utilise all sixteen university partners as key knowledge partners and to draw on their networks of experience and knowledge to formulate the final

benchmarking report. The following section provides a brief contextual overview of education and training linked to employment in South Africa and Mozambique, which is then followed by the formal benchmarking report.

Given the benefits of career-oriented higher education for employability of graduates, the Republics of Mozambique and South Africa are making moves towards developing frameworks for developing competent and capable graduates fit for practice in respective professions. The Republic of South Africa already has policy initiatives supportive of dual studies in higher education such as, the Higher Education Qualifications framework (2007), the Quality Council for Trades and Occupations (2009)¹, Work-Integrated Learning: Good Practice Guide (2011) and the White Paper for Post-School Education and Training (2013).

The Republic of Mozambique does not have explicit policy initiatives to support dual studies in higher education as such, however, it has policies and initiatives that seek to promote professional education and employability in general, namely: (i) *Strategy for Employment and Professional Training in Mozambique*² 2006 – 2015, which calls for the business sector to establish training units and also create opportunities for internships; (ii) the *Regulation of Licensing of Institutions of professional education*³ – which does not explicitly include higher education; (iii) the Professional Education Law, Law 6/2016, (iv) *the Strategic Plan for Education*⁴ (2012-2016), which also mentions broadly the need for internships, but not explicitly in higher education; and (v) the *Strategic Plan for Higher Education*⁵ 2012-2020, which alludes to employability in very broad terms, (v) *Law of Higher Education* (Law no. 27/2009 of 29th September and *National System for the Accumulation and Transfer of Academic Credits* (Decree 32/2010). None of the key Government policy documents and strategic initiatives conveys in a direct and explicit way the need for dual studies programs in higher education. In some higher education institutions there is something similar to dual studies called professional internships or professional practices, conceived to guarantee some professional training to the students during a short period of 6 to 12 months.

Despite these supportive policies, there is little evidence to indicate that higher education institutions implement dual study programmes cognisant of the career competence needs in various economic sectors. Therefore, this survey sought to uncover the national system level

¹ <http://www.qcto.org.za/>

² Republic of Mozambique (2006). *Estrategy for Employment and Professional Training in Mozambique*. Maputo: Approved by the 5th Ordinary Session of the Council of Ministers of 03/14/06

³ Republic of Mozambique.(2017) *Regulation of Licensing of Institutions of professional education*. Gazette of the Republic. Council of Ministers. Decree 28, I-Serie, Number 107, 11 July 2017.

⁴ Republic of Mozambique (2012). *Strategic Plan for Education 2012-2016*. Maputo: Ministry of Education.

⁵ Republic of Mozambique (2012). *Strategic Plan for Higher Educaion*. Maputo: Ministry of Education

policies and legal frameworks and the strategic operational institutional policies and structures for establishing dual study programmes in South Africa and Mozambique.

The study is a comparative survey undertaken by the Learning and Teaching Tools Fuelling University Relations with the Economy in Mozambique and South Africa (LaTFURE) project, which is a consortium of 15 European and African partners. In South Africa, the LaTFURE institutions include: Department of Higher Education and Training (DHET), University of the Western Cape (UWC), University of the Witwatersrand (Wits), University of Cape Town (UCT), University of Mpumalanga (UMP), University of Limpopo (ULP) and Cape Peninsula University (CPUT). In Mozambique, LaTFURE partners include are: Ministry of Education (MSTHE), Eduardo Mondlane University (UEM), Zambeze University (UZ) and Lurio University (UL). The European partners involved in the survey are: Danube University Krems (DUK), Joanneum University of Applied Science (FHJ), Cooperative State University of Applied Sciences (DBHW) and University of Tampere (UTA).

1.1.1 Objectives

- To present contemporary and best practice policy and legal frameworks (system level) and strategic and operational (Institutional level), for establishing dual programmes from the EU
- To present state-of-the-art policy and legal frameworks (system level) and strategic and operational frameworks (institutional level), for establishing dual study programmes within Mozambique and South Africa
- To benchmark the EU, Mozambican and South African frameworks
- To present the demands and expectations of the extractive and tourism industries with regards to the outcomes of university study programmes, which can be mapped against an assessment of the capabilities of universities to meet these demands.

1.1.2 Benchmarking Results

ACT2.1/2.2/2.3 Presentation of EU/Mozambique/South Africa Policy and legal frameworks (system level and strategic operational policies and structures for establishing dual study programmes)

The national system level survey questions are:

1. Which definitions for dual programs are in use in South Africa?
2. How does higher education law regulate work placements within study programs? Does it support dual programs?
3. How do accreditation regimes regulate work placements within study programs? Do they support dual programmes?

4. Which disciplines have study programs in South Africa
5. Which types of institutions offer dual programs?
6. What is the current position and future development of dual programs in the national system?
7. Which barriers do you see for the future development of dual programs in South Africa?

The institutional level survey questions include:

1. The information provided in this questionnaire refers to? (programs)
2. What is the nature of the relationship between the higher education institution and corporate partners in the dual programs?
3. How does the university manage the cooperation with corporate partners?
4. How does the quality management system regulate work placements within study programs? Does it support dual programs?
5. Financial participation by corporate partners?
6. Composition of dual program(s)?
7. Scheduling of work place and university learning?
8. Comparison of traditional and dual programs?
9. What is the current position and future development of dual programs in your institution?
10. Which barriers do you see for the future development of dual programs in your institution?

The questionnaire questions were developed by the project task leaders in DUK to guide a comparative survey and presentation of EU policy and legal frameworks (system level), and strategic and operational policies and structures (i.e. capabilities) (institutional level), for establishing dual study programmes in Mozambique and South Africa. The questionnaire was then adapted for surveying South African policy and legal frameworks (system level), and strategic and operational policies and structures (i.e. capabilities) (institutional level), for establishing dual study programmes.

The next sections report on the findings for the survey of national system level and institutional frameworks for establishing dual studies from LaTFURE partner institutions.

PART ONE: NATIONAL LEVEL SYSTEMS

This section reports on the national systems frameworks in Mozambique, South Africa and EU.

2.1 Defining Dual Studies

Dual studies generally refers to, “an academic study program combined with vocational practical training in a company/institution” (DAAD, 2015).⁶ Other terms reflecting the same idea include Work Integrated Learning (WIL) and Cooperative Education. Patrick et al (2008) defines WIL as, “career-focused learning which integrates theoretical knowledge with work place practical application, within a vocationally designed curriculum” furthermore, WIL can be distinguished from other conceptions of learning-for-work by its emphasis on the integrative aspects of such learning. WIL could thus be described as, ‘an educational approach that aligns academic and workplace practices for the mutual benefit of students and workplaces.’⁷ Cooperative Education is defined as a structured program in which periods of study alternate with periods of related work experience (Kerka, 1989). The definitions of dual studies and WIL imply that while dual studies and WIL are associated with vocational programs, cooperative education implies a wider application of periods of work and study in programmes not limited to vocational studies.

2.1.1 Definitions of dual programs in LaTFURE project countries

In the South African national higher education context, there is no specific definition of dual programmes. A range of definitions that are linked to the notion of dual programmes can be found in the Council on Higher Education’s Work Integrated Learning: Good Practice Guide (2011).⁸ In particular, the definition of ‘sandwich programmes’ seem to be very close to the notion of dual programmes, defined as follows: Sandwich programme: is used to denote a higher education curriculum containing a work placement that is integral to the achievement of the intended learning outcomes for the programme. Thick sandwich programmes contain a yearlong work placement normally in the third year of a four-year programme. Thin

⁶

http://bruessel.daad.de/medien/bruessel/veranstaltungen_2015/german_council_of_science_and_humanities.pdf

⁷ Work-Integrated Learning: Good Practice Guide HE Monitor No. 12 August 2011

⁸ http://www.che.ac.za/sites/default/files/publications/Higher_Education_Monitor_12.pdf

sandwich programmes contain one, or sometimes two, shorter (typically 6 months) or semester (12 to 15 weeks) work placements). In sandwich programmes, the experience of working and learning in the work place enables the learner to develop in ways that are consistent with the programme aims and intended learning outcomes.

Likewise, in the Mozambican national higher education context, there is no specific definition of dual studies programmes. The policy documents and initiatives voice concerns about growing employment and call for more practical and professional oriented education. However, there is no definition or indicators of what kinds of programmes should be established to meet the policy expectations. The key words that allude to dual studies are internships and professional education. There are no regulations on how specific programmes should be established. There is an absence of policy frameworks, including National Qualification Frameworks, to enable the establishment of dual study programmes in higher education. Most of the policy documents make a broad plea to both educational institutions and business to work together in order to address the developmental challenges of the country, without providing guidelines. Most of the legislation and policies that regulate professional education were not specifically conceived for higher education sector as such, but for the whole educational system. There are very similar practices of two dual studies dubbed Professional Education which encompasses two systems, namely, Professional Education and Vocational (Technical) training. It is widely offered at elementary or basic levels up to medium levels equivalent to upper secondary school level. It is understood as a long-term vocational education programme that aims to develop specific technical skills (mainly in the areas of industry, commerce, agriculture, arts and crafts) in order to meet the economic and social needs of the country. In some higher education institutions, the practice was introduced in the curricula in the form of modules (called professional internships or professional practices), to guarantee some professional experience/ practical training for the students. It usually takes during a short period of 6 to 12 months.

In Germany, dual study or Cooperative education is a type of Professional Higher Education (PHE) in which public and private sector organisations directly cooperate with the higher education sector to deliver the programme.⁹ The key feature of the cooperative 'dual' education is that students regularly switch from their academic studies at the university to practical training by their workplace training provider (partner company).). Before 2013 no

⁹ http://www.kmk.org/fileadmin/pdf/Wissenschaft/BE_080918_Bericht_Zertifizierung_NQF_engl_final.pdf

nationwide definition of dual study existed in Germany. In this year the German Research Council published recommendations with a clear classification¹⁰. Up to now this classification is not fully implemented in the German higher education sector.

In Austria, there is no legal definition of “dual studies”, though the term “dual” is very well-established in the education sector (predominantly in VET) and has a positive connotation. Like in Germany, there is a danger that for marketing reasons, all kinds of practically oriented study programs will use the term “dual” in the future. In Finland, though there are no legal/national frameworks for dual study programmes within higher education, a dual system exists where PHE is provided mainly by polytechnics.¹¹

2.2 Regulation of Work Placement within Study Programmes

In South Africa, the Higher Education Act does not include any reference to dual programmes. However, the Department of Higher Education and Training is working to develop a policy that relates to dual programmes. *The Policy Framework for Workplace-Based Learning in an Integrated and Differentiated South African Post-School Education and Training System* is currently in draft form and its ‘key provisions are:

1. The formalisation of a workplace-based learning Policy Framework for an integrated and differentiated post-school education and training system;
2. The development of a common understanding in respect of workplace-based learning;
3. The regulation and quality assurance of workplace-based learning as part of teaching, learning and workplace experience;
4. The description of the roles and responsibilities of all role players involved; and the establishment of a Policy Framework will form the basis for funding, monitoring and evaluation of practice.

This draft policy can be made available in need but is not broader circulation. Dual study programme policies are also supported in the legislative context of: National Qualification frameworks, Higher Education Act, Further Education and Training Act, Skills Development Act, Skills Development Levies Act, Basic Conditions of Employment Act, Labour Relations

¹⁰ <https://www.wissenschaftsrat.de/download/archiv/3479-13.pdf>

¹¹

http://www.pedocs.de/volltexte/2015/10873/pdf/Camillieri_etal_2014_Professional_Higher_Education_in_Europe.pdf

Act, Employment Equity Act, Broad-based Black Empowerment Act, Employment Tax Incentive Act, Sector Education and Training (SETA) levy grant system, Learnership Regulations, Trade Test Regulations. In SA, there are also specific requirements set in certain fields eg teacher education, and in other professions regulated by professional bodies.

In 2016, The Mozambican Government established the National Authority of Professional Education (ANEP)¹². ANEP was established as a body to implement and regulate the professional education. ANEP's mandate includes the definition of policies, strategies, plans and priority actions for vocational education. The establishment of a Policy Framework by ANEP will form the basis for funding, Quality Assurance, a National Qualification Framework and monitoring and evaluation of practice for professional education in the country. Prior to ANEP work placements were based on two policies: the regulation of pre-professional internships (2013); and Labor Law (Law 23/2007 of 1st August). Dual study programme policies are not explicitly mentioned in the legislative context of: National Qualification frameworks, Higher Education Act (currently under review). The LaTFURE project provided the platform for advocacy towards the introduction of provision for dual studies in the higher education law. The Professional Education Law (Law, 6/2016), establishes, in its article 2 and 5, that the objective of professional education is to "*promote the participation of trainees in curricular internships in the workplace*". In terms of its scope, the law 6/2016 applies to all public, cooperative, community or private institutions and establishments that develop technical and professional education and vocational training in the Republic of Mozambique (Law of Professional Education 6/2016). In its article 4, the Professional Education Law, 6/2016, establishes that "professional education comprises technical and vocational education, extra-institutional vocational training and professional higher education. Professional education operates within an integrated, coherent and flexible system geared to the labour market." The Law 6/2016 has introduced some innovations to incentivise the participation of the business and private sector in professional education. For instance, the Law provides for the establishment of the National Fund for Professional Education (FNEP). This fund comprises contributions by the Government, private companies, donors and others. The Law also obliges that private business contribute to the FNEP with a monthly fee of at least 1% of the total cost of salaries of the company.

In Germany, the operational part of the dual education go back to the Basic Law (GG). According to the Basic Law, the federal government is, in the context of legislation, responsible for business law (GG Article 74 Paragraph 1 Nr. 11) and for labour law (GG Article 74 Paragraph 1 Nr. 12). Under the two laws fall also in-company vocational training of

¹² <http://www.parlamento.mz/index.php/ar-aprova-em-definitivo-lei-da-educacao-profissional>

the dual VET system. The federal government has limited legal influence on higher education and on the design of study programmes through the framework act for higher education (Hochschulrahmengesetz HRG) (Ratermann and Mill, 2015: 121) and the Framework Act for Higher Education - Hochschulrahmengesetz (HRG).). One specific point is, that in Germany the federal government does not have the main responsibility for higher education. This is a privilege of the 16 Bundesländer (federal states). Each Bundesland has own regulations concerning higher education and among other things dual studies.

Teaching and studying aims to prepare students for a profession work in a certain work sector, thus study programmes are designed to enable learners to acquire the particular knowledge, skills and methods appropriate to each sector. Moreover, students are expected to develop the ability to perform academically and act responsibly in a free, democratic and social state governed by the rule of law.

The purpose of study at German institutions of Higher Education is described in the following laws:

- * Bundesausbildungsförderungsgesetz (BAföG)
- * Sozialgesetzbuch III (SGB III)
- * Fernunterrichtsschutzgesetz (FernUSG)
- * Betriebsverfassungsgesetz (BetrVG)
- * Bundespersonalvertretungsgesetz (B PersVG)
- * Ethik-Rat-Gesetz (EthRG)

Furthermore, Germany has no specific quality criteria relating to PHE, as accreditation is done on basis of the specific profile of the respective programme without prescribing normative elements which need to be existing. The German national qualification framework only specifies qualification levels for Bachelor and Master Programmes, which are obtained from German PHE institutions.

In Austria, the law on studies at Universities of Applied Sciences (FHStG) stipulates that bachelor programs have to include an internship, and internships do not extend the stipulated duration of studies (180 ECTS) (§3/3). Skills and experiences acquired at the work place can be recognised and accredited for classes as well as mandatory internships (§12/2). Separate regulations exist for the medical field. For example, the regulation on nursing studies stipulates that a minimum of 50% of studies have to be at the work place (Funk-AV §2/1). The law on University Colleges for teacher-training (HG 2005) mentions internships as one type of class within the curriculum (§42/3/3) therefore relevant practical experience can be accredited for practically oriented parts of the studies (§56).

In Finland, Studies leading to a lower university degree may include work practice for professional development (mandatory internship periods), but these are different from the dual study programme (as understood in the LaTFURE project). The studies leading to the higher university degree may include an internship aimed at improving the work-related skills and expertise of students. For instance, the degrees such as Bachelor of Science in Pharmacy include a compulsory internship as do studies for the degrees of Licentiate of Medicine, Licentiate of Dentistry and Licentiate of Veterinary Medicine, the degree of Master of Science in Pharmacy and the degree of Master of Science in Psychology, and education in social work belonging to the field of social sciences include compulsory internships.¹³ For studies leading to a lower University of Applied Sciences degree, internship is an obligatory part of the degree and it has to be at least 30 ECTS. Studies leading to polytechnic Master's degrees at the universities of applied sciences (aka polytechnics), internship is not part of the studies. However, there is a requirement of three years of prior work experience for enrolment eligibility in these programmes.

2.3 Support and Accreditation Regimes Regulating Work Placements within Study Programmes

The Council on Higher Education in South Africa is responsible for the accreditation of higher education programmes in South Africa. The accreditation process reviews programmes against 16 criteria, described in Criteria for Programme Accreditation¹⁴ published in 2004. Criterion 1 focusses on programme design and the description of this criterion specifically includes the following:

“The characteristics and needs of professional and vocational education are catered for in the design of the programme, where applicable. This includes the following:

- The programme promotes the students’ understanding of the specific occupation for which they are being trained
 - Students master techniques and skills required for a specific profession or occupation
 - Work-based learning and placement in a work-based environment form an integral part of the curriculum, where possible
- (p.8)

¹³ Government’s Decree on University Degrees (1039/2013)

¹⁴ http://www.che.ac.za/sites/default/files/publications/CHE_accreditation_criteria_Nov2004_0.pdf

Criterion 15 specifically relates to the coordination of work-based learning, and it requires that: “The coordination of work-based learning is done effectively in all components of applicable programmes. This includes an adequate infrastructure, effective communication, recording of progress made, monitoring and mentoring.” (p.21).

The role of other regulating bodies in SA could also be pointed out here e.g. the role that DHET plays for teacher education, the role of professional bodies in ensuring that students undertake quality workplace learning e.g. articles in accounting, clinical practice in the health sciences etc.

In the case of Mozambique, the Law 6/2016 establishes ANEP as the body that coordinates the implementation of professional education and performs the following tasks:

- a) Manage the National Qualification Framework for Professional Education and supervise all its implementation mechanisms;
- b) Ensure that new investments in the area of professional education are aligned with the policy and strategy of professional education;
- c) Establish and register benchmarks for professional education qualifications;
- d) Certify and accredit the professional education graduates;
- e) Certify the professional education teachers;
- f) Implement the professional education Quality assurance system.

The Law 6/2016 also establishes that the Council of Ministers should create norms and regulation for:

- a) National Framework for Professional Qualifications (QNQP);
- b) System for Professional Internships;
- c) System for Accumulation and Transfer of Credits of Professional Education (SATCEP);
- d) National System for Registration, Evaluation, Accreditation and Quality Assurance of Professional Education

e) System of evaluation and certification of trainees.

By and large, the policy framework and initiatives that make reference to professional education in Mozambique were designed with the aim to improve TVET. In fact, the Government of Mozambique regards TVET as an important strategy in reducing poverty through investing in human capacity education and training.

The Education Strategy (2012-2016) emphasises, amongst other things, the need to improve access, the relevance and the quality of TVET to contribute to the country's development. In order to attain this objective the strategy proposes a number of interventions, including to:

- Improve the quality of equipment in schools;
- Construct TVET centres in rural areas;
- Increase the number of short term programmes offered;
- Encourage greater private sector involvement;
- Link TVET programmes to the needs of the formal and informal labour markets; and
- Improve the TVET governance system, specifically focusing on administration and quality.

In Germany, the Standing Conference of the ministers of Education and Cultural Affairs adopted structural guidelines in 2003, amended in 2010, which form the basis for the accreditation. These set the framework for the planning of study courses, which should provide an academic foundation, methodological skills and qualifications related to the professional field corresponding to the profile of the HE institution and the study course. The courses are modularised and assigned credit point system ECTS. The German Accreditation Council published in 2010 recommendations for the accreditation of study programmes with a specific profile including dual studies¹⁵. These recommendations are a fundamental basis for operations of the agencies, which conduct the accreditation procedures.

¹⁵ http://archiv.akkreditierungsrat.de/fileadmin/Seiteninhalte/AR/Beschluesse/AR_Handreichung_Profil.pdf

While higher education programmes need not be accredited in Finland, as it is not required by the national quality assurance model (institutional quality audits are conducted by Finnish Education Evaluation Centre - FINEEC). In Austria, Bachelor programs at universities of applied sciences have to include an internship. The selection, supervision and grading of internships must be in line with the objectives of the study program (AQ Austria, Regulation on accreditation at universities of applied sciences, §17/m). According to the regulations on teacher-training curricula, (attachment to the law on University Colleges for teacher-training (HG 2005) bachelor programs have to include practical studies. Future teachers in the vocational field can credit lots of practical experience for their studies. The law and accreditation criteria for private universities do not mention any kind of workplace-based learning.

2.4 Disciplines and Institutions offering Dual Programmes

In South Africa, Study programmes which have a required work-based component include the following:

- Initial teacher education programmes
- Medical health programmes such as the MBCHB
- Diplomas such as engineering, hospitality studies
- Law
- Accounting etc

Higher education institutions offering dual studies include general academic universities, comprehensive universities and universities of technology.

Most of the policy documents and initiatives for the development of professional education are quite recent and have not been fully implemented in Mozambique. An analysis of the legislation and policy shows that the Mozambican education sector has been conceived as a trinary system of three major streams: (i) General education; (ii) General education with TVET and (iii) TVET education. Each stream starts from the compulsory (basic) or foundational general education, which is divided into three cycles: *Primary education* – comprises 3 sub-cycles – sub-cycle (1) primary education – length 2 years; Sub-cycle (2) Primary education – length 3 years and subcycle (3) primary education – length 2 years. The second cycle comprises secondary education, with two sub-cycles and branches into two streams, namely:

General Education and TVET Eductaion. The General education stream has two sub-cycles of 2 years each (i) Academic Junior secondary- lenth 3 years and Academic Senior secondary with a lentgh of 2 years. The TVET stream also has two sub-cycles, namely: TVET junior secondary with a lentgh of 3 years and TVET senior secondary with lenth of 3 years. After the secondary level both streams lead to tertiary education, which is basically divided in two streams, Academic and Polytechnic. However, in reality the distinction between academic and polytechnic programmes it is not clear in the higher education institutions.

	Academic Stream	Polytecnic/ TVET Stream
TERTIARY 5-8 ISCED ¹⁶ (5-8)	Tertiary	Education
SECONDARY ISCED (2-3)	Academic senior secondary (2 Years)	TVET Senior secondary (3 Years)
	Academic Junior secondary (3 Years)	TVET Junior Secondary (3 Years)
PRIMARY ISCED (1)	Primary education 3rd Cycle (2 Years)	
	Primary education 2nd Cycle (Years)	
	Primary education 1st Cycle (2 Years)	

Compiled and adapted by Langa, P (2017): Original Source: **Government of Mozambique (2014). Bulletin of the Republic. Series I, no. 76. Maputo: Government of Mozambique.**

The absence of a Naitional Qualification Framework for Higher Education contibutes for the blurred distinction between academic qualificatiin from professional or TVET qualifications in

¹⁶The International Standard Classification of Education (ISCED) is a statistical framework for organizing information on education maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

tertiary education. Higher education institutions offer a mix of courses and programs that can be regarded as purely academic, because they are based on traditional/classic disciplines, such as Physics, Chemistry, sociology. HEI's also offer a range of so called applied areas or fields of study such as education, environmental sciences, developmental studies, etc. The traditional professional qualifications such as Law, Medicine are also offered by various types of higher education institutions. The mix of qualifications within the various courses, programmes and institutional types amounts to a chaotic system with lack of coordination (see: Langa¹⁷, 2017).

Formally there are no dual study programs in the Mozambican in higher education. Currently, there are various practices of integrating learning and practice, particularly through internships. Apart from the traditional programs which require internships, during the course of the training, such as Medical, Clinical Psychology or teacher training, most programs adopt a variety of internships practices that often take place at the culmination of the study program.

In Germany, dual studies are predominantly provided in the following specialisations: Accounting, Business Administration, Management, Health Sciences, Nursing Science, Engineering, Entrepreneurship and Media. Dual study programmes are more common in universities of applied science (Fachhochschulen) than in full universities, which are rather more research oriented than universities of applied sciences. In Germany there are sporadic specialized higher education institutions like Baden-Württemberg Cooperative State University, which is a full dual institution and all other higher education institutions.

In Austria, dual studies are offered in specialisations such as Teacher-training, Medical studies, Nursing and Midwifery, Veterinary medicine and Engineering. The specialisations are offered in different types of institutions described below.

Austria has four types of higher-education institutions, i.e. public universities, universities of applied sciences, private universities, and university colleges for teacher training. At the public universities, the dual approach is strong in the medical discipline, where students spend 1 year plus 12 weeks in different hospital units and private practices. The practical learning is part of the curriculum and students earn 71 out of 300 ECTS credits¹⁸. The two

¹⁷ Langa, P.V (2017) A disjointed multi-campus system: the neo-liberal expansion and fragmentation of Mozambican higher education. *Tertiary Education and Management*, Vol. 23, (1), 23–40. DOI: 10.1080/13583883.2016.1214286

¹⁸ Medical University of Vienna, Curriculum "Medicine"

Austrian pioneers for dual studies are universities of applied sciences. They started with programs in the technical field. Universities of applied sciences regularly include internships in their study programs. Two institutions, i.e. FH Joanneum and FH Vorarlberg, offer dual programs in the narrower sense, where each student has a long-term work contract with a corporate partner. Many universities of applied sciences offer programs in the medical field (nursing, midwifery, etc.) which may be considered “dual” – though this is not common in Austria. At university colleges for teacher training, repeated workplace-based learning is a longstanding tradition. However, with recent changes in teacher education, new curricula emphasise more the theoretical part at the cost of practice learning.

In Finland, all bachelor’s degrees in Universities of applied sciences have a mandatory internship, and some of the Master’s programmes in universities have included internship period (10 ECTS) in their curriculum.

2.5 Current Position and Future Development of Dual Programs in the National Systems

Currently in South Africa, dual programmes are relatively widespread for the disciplines in which a work-based component is part of the study programmes. Greater emphasis is being placed on the need for graduates from certain programmes to be more work-ready and this may translate into a greater need for dual programmes in appropriate areas in the future.

Despite enabling legislation, Higher Education institutions typically do not offer dual education programmes outside of traditional disciplines such as Medicine, Accounting, Law, Education and Engineering in which WIL represents more structured learning in the workplace related to theoretical teaching. An exception to this are the Universities of Technology who offer Cooperative Learning programmes with industry, although the learning in the workplace is not tightly regulated. Technical Vocational Education and Training (TVET) Colleges are involved in Post-School Education and Training through the Nated 151 N4-N6 programmes, which require 18 months of theory at a TVET College resulting in an N6 Certificate. After completion of an 18-month internship in the workplace related to their studies, graduates earn an N6 Diploma. NQF Level 5 Higher Certificates are also being introduced to TVET Colleges by universities, although the workplace-learning component appears to be small.

Currently in Mozambique, dual programmes are not part of the vocabulary and practice for most of the study programmes. Growing emphasis is placed on the need for graduates to be more work-ready, entrepreneurial and self-employable. The legislation and policy framework are more geared towards strengthening TVET education and often does not directly cater for higher education as a sector in which dual professional education can also

be developed beyond the traditional disciplines such as Medical, Law, Education, Engineering in which more structured integration between learning and workplace practice seems evident. The current concerns with perceived growing unemployment of higher education graduates and the restructuring of the TVET sector creates an opportunity for dual studies programs to be considered as a viable alternative. In Mozambique there is a strong potential to develop dual studies. The local labour market has a need for people with high level of education but also with good experience and technical skills. The introduction of dual studies would require explicit regulation to inform curricula reforms, new partnership agreements between HEI's and industry, some structural changes - national coordination policy framework for education at all levels.

In Germany, the innovative hybrid form has potential to play an important role in the development for skills in the 21st century, especially also regarding the shortage of skilled workers now and in the future (Graf et al., 2014: 11). Other supportive factors include:

- Various actors from politics, science and industry repeatedly emphasize the advantage of dual study courses and advocate for their strengthening.
- The supply of dual study programmes has increased significantly and stumbles upon a growing demand (Wolter et al., 2014: 13).
- The reputation of graduates at the labour market and with employers is extremely high.
- There is a strong growth and a strong interest in dual programs.

The growth is:

- by higher education institutions offering dual programs,
- by student numbers (approximately 70000 Students now enrolled in dual programs)
- by number of programs offered on Bachelor but also on master level

It is worth noting that the full practice integrated version of the dual studies is the most successful in terms of employability but also brings a lot of requirements which cannot be met by many providers. It is also interesting to note that in some fields, programs are traditionally delivered in a dual mode (health sciences, teacher-training) but the label "dual" is not used. Generally it has to be ascertained, that the quick expansion of dual study programmes in Germany caused a quality problem (Nickel/Püttmann 2015). The most critical point is a smooth cooperation between higher education institutions and private enterprises.

In Austria, two universities of applied sciences, namely, FH JOANNEUM and FH Vorarlberg have introduced dual programs in the technical field, and can be seen as pioneers of dual studies for disciplines where this has little tradition. The ministry-run website “studieren.at” refers to the success of the dual model in Germany and expects that dual studies will grow in Austria.¹⁹ The Austrian Accreditation Agency (AQ) has several years of experience with dual study programs, which was discussed during its annual meeting in 2014. Presently, as revealed by a google search, some companies offer dual studies with employment in Austria and studies in Germany respectively at Austrian branches of German Universities.

In polytechnics in Finland, work placements and internships are a common and well-established practise. In some polytechnics, more innovative approaches have been introduced for degree programmes with dual study components. For example, programmes in business administration at the Proakatemia in Tampere and Teamakatemia in Jyväskylä University of Applied Sciences provide studies including intensive entrepreneurial workshops. In universities, the overall attitude towards dual studies is more reserved due to the traditional emphasis of theory and science over the vocational/professional element in the studies. However, internships are becoming more and more common in most of the educational fields. In both types of universities, there are several pedagogical modes of introducing work life experience into academic curricula as well as entrepreneurial for engaging students in work experience as part of their studies.

2.6 Barriers to Future Development of Dual Programmes

In the South African context, the following issues must be taken into account if dual programmes are to be an effective study pathway:

- The inability of sub-qualification frameworks to effectively work with each other. The Quality Council for Trades and Occupations (QCTO) is responsible for occupational and work-place based qualifications on the Organising Framework for Occupations (OFO), but it does not interface efficiently with the Council for Higher Education’s Higher Education Sub-Qualifications Framework (HEQSF). This makes accreditation and articulation of occupational programmes, including dual study programmes difficult.
- Adequate funding and resources allocated to the learning component that happens outside of the university. The experiential learning component for UoT qualifications is not funded e.g in engineering and some medical diplomas. Some medical diplomas do receive clinical

¹⁹ <http://www.studieren.at/duales-studium>

training grants. Workplace Integrated Learning in teacher education and clinical training in some medical qualifications are funded through the formal subsidies and in certain medical qualifications also through the clinical training grant.

- Strengthened quality assurance of the learning component that happens outside of the university
- Alignment between institution-based learning and work-based learning so that they actually and effectively reinforce each other.
- Willingness of workplaces to enable workplace learning opportunities for students. Providing students with access to discipline-related work experience remains a critical issue for South African universities. Therefore, enhancing the employability skills of university students via integrated career education, and “soft skills” development are central to success in WIL. Meeting the growing demand for WIL among university students requires a multipronged approach which hinges on cooperation between university students, universities, employers and government
- A dedicated and competitive WIL administration/administrator from universities may play a big role between universities, students and workplace

In the Mozambican context, the following key issues must be taken into account if dual programmes are to be an effective study pathway:

- a) Political awareness of the relevance of dual studies as a viable form of professional education;
- b) Policy making in general should be more knowledge/research based;
- c) The need to establish a coordinated and harmonised national Qualification Framework for both the Professional Education and Higher Education systems. Currently there is no Qualification Framework in place for Higher Education; the Council for Higher Education’s Higher Education Sub-Qualifications Framework (HEQSF). This makes accreditation and articulation of occupational programmes, including dual study programmes difficult.
- d) Adequate funding and resources allocated to the learning component that happens outside of the university.
- e) Strengthened quality assurance of the learning component that happens outside of the university.

- f) Alignment between institution-based learning and work-based learning so that they effectively reinforce each other.
- g) Buy-in and willingness of industry to enable workplace learning opportunities for students.
- h) Consider establishing incentives to appeal to the (local) Industry buy-in and direct involvement/participation.
- i) Need to consider the cost-sharing mechanisms between universities/academic institutions and partner in industry industries;
- j) Shortage of qualified and experienced supervisors both at industry including Higher Education Institutions.

In the German context, there are no legal barriers for the further development of dual studies in Germany. However:

- The full practice integrated model is quite challenging to govern and finance, so only full dual model institutions can cope with the requirements.
- The challenges of further development are within the following areas:
 - Culture: Integrating business and academic culture
 - Costs: the cost of organizing the dual cooperation
 - Setting up a mutual Governance structure
 - World of work commitment financially
 - Infrastructure
 - Legal challenges
 - Quality challenges
 - Curriculum design

In Austria, it is noted that the structure of the Austrian economy is dominated by small and medium-sized enterprises, dual programs require many partners and hence intensive inter-institutional management. Now that dual programs are not so widespread, there is still the possibility that dual programs will be seen as second class degrees in the future.

Another barrier relates to the strict laws on duration of study programs could threaten the reputation of dual degrees in Austria. While the German Science Council recommends

extending the duration of dual studies, Austrian laws forbids that workplace-based learning extends duration of studies.

Further, the mismatch between university places and work placements is seen as barrier to future development of dual studies. At present, public universities cannot limit the student numbers, but the number of corporate partners is limited by the economy, therefore because of this mismatch, public universities might stay reluctant to develop dual programs.

In Finland, the major emphasis has been placed on development of Recognition of Prior Learning (RPL), not in development of actual dual programmes. The Finnish education system does not recognise such a concept tertiary level but it does so in secondary level where there exist “apprenticeship training” equivalent to dual study programmes. At least at the moment, there does not seem to exist neither political willingness nor practical necessities to introduce such programmes, as the topic has been completely absent in the agendas and initiatives related to reforming higher education.

PART TWO: INSTITUTIONAL LEVEL FRAMEWORKS AND CONDITIONS FOR ESTABLISHING DUAL STUDY PROGRAMMES

This section reports on institutional level frameworks for establishing dual study programmes from UWC, UMP, Wits, UCT, CPUT, DUK, FHJ, UTA, DHBW, UL and UEM.

3.1 Surveyed programmes

Table 1

	PROGRAMME
UNIVERSITY	
UWC (own survey)	Traditional programmes (health, education, law)
UMP(own survey)	Diploma in Hospitality and Tourism Diploma in Hospitality Management Diploma in Tourism submitted to DHET for accreditation Diploma in Agriculture
Wits (own survey)	Mining Engineering
UCT (own survey)	Chemical Engineering
CPUT (own survey)	. National Diploma in Tourism Management. National Diploma In Event Management
ULP (own survey)	Traditional programmes (health sciences i.e. nursing and humanities i.e. education)
UEM (own survey)	Tourism and hospitality management, Mining Engineering
UZ (own survey)	Traditional program (Health)
UL (own survey)	Health Sciences majors, Tourism and Hospitality
DUK (own survey)	Post-experience programs, academic continuing education (concrete examples refer to the MA in Educational Management)
FHJ (own survey)	Bachelor program Production Technology and Organisation PTO Master program Engineering and Production management ENP (examples refers mainly to PTO)
UTA (own survey)	No information received
DHBW (own survey)	Entire institution offers only dual programmes

3.2 Nature of relations between institutions and corporate partners

Table 2

	Nature of relations between institution and corporate partners
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - Contracts range from university placement of health science students with state health institutions/private institutions to individual law graduates negotiating articles with law firms. - In Education, the Faculty assists students to obtain workplace experience at schools. None of these internships for law, health sciences or education can be accurately described as a dual learning programme. In the case of education and health sciences, students undertake work placements in a school/health facility as part of their formative undergraduate degree. For law, students undertake articles with a private law firm on completion of their undergraduate degree.
UMP (own survey)	<ul style="list-style-type: none"> - Strong relationships exist between UMP through the School of Hospitality and Tourism Management with corporate partners. - Relations strengthened by formation of an Industry Advisory Board Committee that meets once per semester to, <i>inter-alia</i>, discuss areas of concern that help in curriculum design and development. - Very strong relations also exist with the Agricultural industry and UMP's Faculty of Agriculture which has a work integrated learning programme
Wits (own survey)	<ul style="list-style-type: none"> -Currently the School of Mining Engineering only offers full time undergraduate program. The study mechanism is the student attends for the duration of 11 months (contact learning and time for assignments and exams) and on the 12 month which is a vacation period the students are advised to go to corporate partners for vocational work. This period the students are exposed to mining environment and embark on a project pertaining to the operation they will be exposed to. Therefore there is no opportunity for a "dual learning" program. - NQF level 6 certificate programs namely: Mineral Resource Management (MRM) and Mine Planning. These are offered to students who may or may not have a 3 year degree but have substantial amount of experience from being in the industry for a long time. -There will be the a NQF level 6 Advanced Mine Ventilation Certificate rolled out in 2018. This will be offered as a formal qualification. -NQF level 9 MSc programme 50/50 (course work and research report) is attended by a majority of students from industry. The research report is conducted at the place of employment. Therefore, the employer fully funds the student and encourages a research topic that will also benefit the company.
UCT (own survey)	<p>The relationship between the department and corporate "partners" is non-contractual as far as the Department is concerned. The corporate partners agrees to host our students in pro bono this is especially so for the 2nd year level dual program. At the 3rd year level, the program could form part of the student's bursary obligation.</p>
CPUT (own survey)	<p>CPUT promotes Co-operative Education as a philosophy of learning that is based on a partnership between the institution and its external stakeholders (industry) whereby the common objective is to provide the student with an enhanced learning experience in a workplace. In essence, this is a three-way partnership in which the students alternate academic study with periods of work experience, during which they apply their learning in real-life situations under the supervision</p>

	of experienced mentors in the work place as well as the guidance of academic staff from the institution. The work that is covered during this period is monitored and assessed according to requirements set out by specific departments. This type of learning is called experiential learning.
DUK (own survey)	Typically, there is no legal relationship between the companies and the university. The student links these two institutions.
ULP (own survey)	<ul style="list-style-type: none"> - At UL Contracts range from university placement of health science students and state health institutions i.e. department of health and private institutions i.e. pharmaceutical companies and private hospitals. - In Education, the Faculty work in partnership with the department of education assists students to obtain workplace experience at schools. Students are being offered bursaries to pay for their tuition fees, accommodation and books. After completion student are offered placements in government schools for a certain period of time then after they can then choose to work elsewhere. - In Social work programme through partnership with the department of health and social department student are being trained at public institutions whilst studying. <p>None of these health sciences, education or social work programmes can be accurately described as a dual learning</p>
UEM (own survey)	<p>There is no cooperation with corporate partners as such for dual studies at UEM. However, usually UEM established formal partnerships with Government and companies to offer joint programs. Almost all MoU's established with the companies include the possibility for professional internship for students. In some faculties such as Medicine and Education, there is a long tradition of working with the public hospitals and cooperate for internship of medical and psychology students. No formal structures are set to deal specifically with dual studies. The UEM cooperation office is the entity that in general prepares or assists with the MoUs. The Cooperation Office deals with the formalization of the agreements primarily made by the faculties and Schools where the students are.</p> <ul style="list-style-type: none"> - The faculties and schools also have the autonomy to coordinate the placements. - The university does not have total control to make decisions about supervision methodology (or other related issues) while the students are at the workplace. - Some schools and faculties have a department of internships, which is responsible for identifying corporate partners, negotiate the terms of the agreement, select and send students (in coordination with the course/disciplines departments). The university has a somewhat good relationship with the industry, which (depending of funds or vacancies) offers some financing to students in order to continue their studies or start working with them.
UZ (own survey)	Zambeze University has MoUs with corporate partners under which students can be hosted as interns for practices during their studies. Such MoUs do not bind corporate partners in terms of hosting interns. Indeed, some corporate partners host students as interns without a MoU. There is a MoU with the Ministry of Health which ensures that the programme in health sciences has legal relationships with public hospitals to host students for practices from the 3 rd year onwards.
UL (own survey)	Lurio University has general memorandums of understanding with corporate partners under which

	<p>students can be hosted as interns for practices during their studies; however, some study programs such as of health sciences, have legal relationships with private hospitals, medical clinics and pharmacies to open opportunity for students' placements. Some of those partners charge the faculty for the placements to take place</p>
FHJ (own survey)	<p>There is no legal relationship between university or study program and corporate partner. The student links these two institutions.</p> <p>The legal relationship between university and dual student is the same as any "normal" student) (Att. FHJ 000). Dual students have to sign an additional Einverständniserklärung (Att. FHJ _001)</p> <p>The legal relationship between company and student is an employment/training contract (Att. FHJ _002 and guidelines for practical training. (Att. FHJ 003).</p>
UTA (own survey)	<p>For the internship, a contract is usually done between a faculty and an employer²⁰.</p>
DHBW (own survey)	<p>In general, there are existing collaborations between employers, students and HE institutions. As mentioned earlier, at all kinds of HE institutions members of the employer side are represented in so-called Boards. The influence they have differs a lot depending on every state law as well as the institution and department itself. The influence of the world of work on study programmes is lower at universities than at UAPs and DHBW. Nevertheless, this can differ between universities and their subjects. In many close to business subjects, Honorary Professors are building bridges between the academic world and the business side.</p> <p>The apprenticeship system in Germany is well developed which is part of the study programme at UAPs. Here also the professors need to have a work experience of at least 5 years outside from a HE institution and most keep their link to the business side. At DHBW a Professor must have at least three years of work experience. External lecturers from the world of work represent more than 50 per cent of all study hours.</p> <p>Students influence By Law students are members in different committees, regulated either through the Higher Education Act of the federal state or the basic regulations of the HE institution.</p> <p>Employers influence The employers' side, there are representing employers' interests three types of interest organizations. One of the major tasks of the employers' associations (Arbeitgeberverbände) is during the process of collective bargaining. The trade associations (Wirtschaftsverbände) are specialized in lobbying for business interests within the political system. The chambers of industry and commerce (Industrie- und Handelskammern, IHK) are responsible for a number of tasks of economic self-governance, such as the testing system for apprentices. (Graf, 2013: 94)</p>

²⁰ <http://www.uta.fi/studies/employment/internship.html>

- Generally, at all kinds of HE institutions members of the employer side are represented in Boards.
- The influence of boards differs depending on every state law as well as the institution and department itself.
- Employers act as: 1) a practical learning site and are interested in gaining high-educated young people for the company, 2) enterprises economic system which are profit making entities which seek to minimize costs and maximize benefits and 3) Part of the university system, as a funders of research and development as well as knowledge mediators through participation in the teaching (Ratermann and Mill, 2015: 91).
- The “dual partners” are by law (higher education act in Baden-Wurttemberg) members of the university and are represented in the central committees
- Each student has a study contract with his/ her dual partner organisation.
- The dual partners have to apply for membership and have to be admitted. The admission comprises an institutional “check-up” by one professor. The admission takes place as a decision by the local campus council.

3.3 Managing the cooperation with corporate partners

Table 3

	Managing cooperation with cooperate partners
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - UWC does not have a coordinating office for workplace learning. - Work placements are generally coordinated at a faculty level in traditional disciplines of education, health sciences and law. - Management of the educational quality of workplace learning varies across faculties, with health sciences exercising the most stringent requirements
UMP (own survey)	<ul style="list-style-type: none"> - UMP does not have a coordinating office for workplace learning however, there is a Work Integrated Learning co-ordinator who constantly liaises with industry stakeholders. - There is quality assurance committee at program/s level that manages the quality of work-place learning and approves establishments targeted for work-place learning. - Memorandum of Understandings (MOUs) are then signed between the university and corporate partners with terms of references. - The Work Integrated Coordinator (WIL) conducts an Industry site visit a minimum of once per placement cycle. The visit further cements relationships. - The Corporate partner is expected to appoint a mentor/s, which serve as supervisors to students. Supervisors are required to monitor and evaluate the students' progress.
Wits (own survey)	<ul style="list-style-type: none"> - The School of Mining in Wits University has various committees that liaise with corporate partners. These include WUMEA and forming coalition with independent bodies such as SAIMM and GSSA. These bodies bridge the gap between academia and the mining sector. - There are some mining companies that give students funding to further their studies and there are research opportunities that are being given to the school for students to embark on. - The School does have a good relationship with the industry but currently it is not on a contractual basis but depends highly on the presence of funds offered by the corporate partner.
UCT (own survey)	<ul style="list-style-type: none"> - The planning of the student projects to be carried out in industries is done jointly by a supervisor from the department and a representative from the host company. - The department also manages and plans for student's accommodation and transportation. During the program, all the students stay at the organised accommodation for the duration of program. - The students are supervised and assisted by their departmental supervisor to carry out the planned projects. The supervisors are a combination of academics and postgraduate students from the department. - At the end of the programme students, present the results from their projects to the host site management. A pass or fail mark is awarded by the departmental supervisor and "corporate partner" management based on the student's interaction with the corporate partner personnel and conduct in carrying out the project. - To initiate the program, e-mails are sent by the Head of Department to various chemical engineering companies in South Africa requesting placement. Once a host site has agreed to host our students the management and planning of the projects the students will carry is discussed between the departmental supervisor and the company representative.

<p>CPUT (own survey)</p>	<ul style="list-style-type: none"> - Each CPUT Faculty has a WIL Coordinator who is responsible for the Community engagement and Co-operative education activities of their respective Faculty. Each Department is assigned a Co-operative Education Coordinator. - The Co-operative Education coordinator is responsible for engaging closely with corporate partners for placement, determines the suitability of Corporate Partners; a key consideration is the quality of the Industry exposure the student will be afforded during their tenure as interns. This is determined by the tasks/duties the student will be assigned in relation to the Learning Areas that govern the placement process. - CPUT mandates all Departments to engage with key Industry members by way of an Advisory Committee, which meets once per Semester, vital for strengthening Institution/Industry relationships and used as a soundboard to discuss pertinent curricular and Industry matters. - The Co-operative Education Coordinator (where possible) conducts an Industry site visit a minimum of once per placement cycle. The visit further cements relationships. - The Corporate partner is expected to appoint a mentor/s, which serve as supervisors to students. Supervisors are required to monitor and evaluate the students' progress.
<p>ULP (own survey)</p>	<p>At the University of Limpopo, we do have existing contracts between the university and the students in a form of work study programs and also between the university, student and industry more specially government departments.</p> <p>University and students</p> <ul style="list-style-type: none"> - There are study work programs mainly for students who are in doing their post-graduate studies i.e. honours, masters and PhD students. They are allowed to work for not more than 20 hours per week and 80 hours per month. Through this programme student are exposed to the world of work where they will be assisting staff members with their day to day duties and some even doing the real work that staff members are doing. A senior official, professor or HOD will be monitoring the students on daily basis to ensure that - they comply with rules and regulations of the university. All will be guided by the university's HR policy. <p>University, student and industry</p> <p>-The university of Limpopo has got collaborations with various government departments and private business where it sets a platform for students to study while also gaining experience in the world of work. This is mainly in the field of Health and Humanities where students will spend almost 50% in the classroom and 50% in the industries performing duties of their expertise. Normally the collaboration with most of government institution will be between the university and a certain department whilst with private business will be between the company and the student. Those collaborations that are between the state and the university will be managed by a senior government official and also a university official or professor who on a day to day basis will monitor the student and to ensure that they comply with the policies of both parties.</p>
<p>UEM (own survey)</p>	<p>There is no cooperation with corporate partners as such for dual studies at UEM. However, usually UEM established formal partnership with Government and companies to offer joint programs. Almost all MoU's established with the companies include the possibility for professional internship for students. In some faculties such as Medicine and Education, there is a long tradition of working with the public hospitals and cooperate for internship of medical and psychology students. No formal structures are set to deal specifically with dual studies. The UEM cooperation office is the entity that in general prepares or assists with the MoUs. The Cooperation Office deals with the formalization of the agreements primarily made by the faculties and Schools where the students are.</p>

	<ul style="list-style-type: none"> - The faculties and schools also have the autonomy to coordinate the placements. - The university does not have total control to make decisions about supervision methodology (or other related issues) while the students are at the workplace. - Some schools and faculties have a department of internships, which is responsible for identifying corporate partners, negotiate the terms of the agreement, select and send students (in coordination with the course/disciplines departments). <p>The university has a somewhat good relationship with the industry, which (depending of funds or vacancies) offers some financing to students in order to continue their studies or start working with them.</p>
UZ (own survey)	A supervisor from the university (appointed by respective departments or faculties) manages the student/worker.
UL (own survey)	Study program managers contact the potential placement hosts to know their hosting capacity per each teaching period. After all partners have been contacted, students are distributed according to the availability. Within the partners' place a senior employee is appointed as students' supervisor. The relationship remains at the institutional level without any direct obligations between students and our partners. The placement supervisor reports to the study program coordinator
DUK (own survey)	<ul style="list-style-type: none"> - Some programs and departments have advisory boards. Board members might come from companies, but also from associations or chambers representing a larger number of companies. - The university employs a large number of adjunct lecturers, some of which might also come from companies.
FHJ (own survey)	<ul style="list-style-type: none"> - The cooperation with companies is managed on study-course level, not on university level. Most of the existing cooperations are based on a personal professional relationship between lecturers and companies, resp. certain persons in the companies. - New relationships are often built on targeted contact of corporate relations officer the due to the student's efforts to get a work-placement at a certain company. <p>- Tasks and activities of the corporate relations office are:</p> <ol style="list-style-type: none"> 1.) a Mentors' Meeting (1 x year): Mentors of the companies are invited to the university to exchange experiences with each other and with the university 2.) Supervisors Visit at the company (approx.1 time a year/company) [FHJ_004]: A lecturer visits the company of the student. First visit is to talk about his development (FHJ_006, FHJ_007); second visit is to define a bachelor thesis. 3.) supporting/coaching students in regards of their applications [FHJ_008] 4.) Support companies and students in regards of the creation of their contract 5.) Organising an accompanying seminar on the internships, where Internship reports are prepared and their experiences are reflected.
UTA (own survey)	<ul style="list-style-type: none"> - University has an alumna council, a regional higher education collaboration network (Unipoli) as well as the top management has annual discussions with regional stakeholders. - University has organised its partnership work (and partnerships) under a common action plan. - According to the National legislation, the chair of the university board is not a member of university community and half of the members have to external representatives. According to university level regulation, the Faculty councils may have external members.²¹

DHBW (own survey)

- Joint study committee, planning and supervision of workplace learning by university,
- study program manager, corporate relations office ...
- Quality management on program level, including the management of educational quality of work-place learning
- At DHBW, a Professor must have at least three years of work experience. External lecturers ' from the world of work represent more than 50 per cent of all study hours.
- 40% of all teaching has to be done by a professor (who needs to have practical experience), therefore external lecturers do around 60 per cent of all teaching (with certain requirements: university degree, practical experience and lecturer experience).
- Employer involvement as an official partner of the university, part of the expert commission (regulated by federal state law), part of committees, such as the quality circle.
- The success of the dual apprenticeship system is due to the close partnership among all
- social partners. The legal basis is set by the Vocational Training Act (Berufsbildungsgesetz, BBiG). Social partners are: the federal government, who recognizes the training, sets the requirements for training and examination and general training regulations. Each federal state issues the curricula for part-time vocational schools, finances the teaching staff and supervises the chamber activities.
- The employer and the chamber of industry and commerce/German confederation of skilled
- crafts represent the industry. The employer creates and updates the training occupations, nominates experts for training regulations and negotiates provisions in collective agreements like remuneration. The chamber advises stakeholders in training, supervises
- the training in the company, verifies the aptitude of companies and training instructors, registers training contracts and administers examinations.
- For each study programme there is a study head, which is a professor in charge of managing the cooperation with the dual partner organisation. The so called "programme head" has a
- 50% teaching load reduction. There are 700 professors and 350 of the have the position of program head.

3.4 Quality management system regulating work placement

Table 4

	Quality management systems regulating work placement
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - Traditional disciplines (e.g. law, education and health science) have long been associated with workplace learning at UWC, but this is aimed at the professional registration of these candidates and is not centrally coordinated.
UMP (own survey)	<ul style="list-style-type: none"> - The school through a committee issues a logbook that students fill in every month reports to the University for Evaluation. - During work placements, students are assigned to mentors who in turn fill in logbooks to rate students' performances. The process is developmental and provides quality checks and balances. - For quality control purposes, the logbook is moderated internally at second year level and externally at exit level (third year) as governed by UMP policy on moderation of assessments. - Students are visited at least twice in 6 months for evaluation and feedback from employers. - There is also a university policy on work place learning to ensure that all programs with work-place learning operate within the framework of university quality standards.
Wits (own survey)	<ul style="list-style-type: none"> - The School of Mining Engineering Wits University does not have a dual learning system for undergraduates and when students embark on postgraduate studies, there are not work placement programs upon completion of the degree. - All students are required to complete two-vacation work period in the mining industry. It is usual during this time that the students gather their research data in order to complete their individual 4th year research projects.
UCT (own survey)	<ul style="list-style-type: none"> - A departmental supervisor and corporate partner representative manage the quality of the experience. The departmental supervisor together with the corporate partner representative plan the level of difficulty and relevance of the projects that the students carry. - The departmental supervisor and corporate management in the form of a short presentation to the corporate partner on the work carried out during the visit evaluate the quality of participation by the student.
CPUT (own survey)	<ul style="list-style-type: none"> - Workplace based learning is an exit level subject; the said subject is also compulsory and credit bearing. Students and corporate partners are required to complete paper work before, during and after placement which is used for both monitoring and assessment purposes. - Where possible the Co-operative Education Coordinator conducts a minimum of one Industry site visit. - The student submits a Portfolio of evidence as part of the summative assessment and the supervisor completes a Performance Appraisal. Portfolios are moderated internally and externally.
ULP (own survey)	<ul style="list-style-type: none"> - The Central Quality Management Office regulates and promotes quality

	<p>assurance measures through its branches set up in all the faculties and study program coordinators, who usually involve placement supervisors in their work</p> <ul style="list-style-type: none"> - A departmental supervisor and corporate partner representative manage the quality of the experience. The departmental supervisor together with the corporate partner representative plan the level of difficulty and relevance of the projects that the students carry.
UEM (own survey)	<ul style="list-style-type: none"> - A supervisor from the university (appointed by the department or selected by the student) and another from the company manage the student/worker. - Both supervisors share a student evaluation form where they register all important data for the last evaluation by the university. <p>As the mixture of theory and practice happens in the classroom or in written assignments, the quality assurance system does not have distinct tools for the practical element.</p>
UZ (own survey)	<p>The Ministry of Health used to pay 50% of a Medical Dr salary to final year university students of Health Sciences hosted as interns at public hospitals. However, currently, due to financial constraints, such payments have been cancelled. In other fields of studies, some companies offer scholarships to certain students based in the own needs and priorities of the companies.</p>
UL (own survey)	<p>Central Quality Management Office regulates and promotes quality assurance measures through its branches set up in all the faculties and study program coordinators, who usually involve placement supervisors in their work</p>
DUK (own survey)	<ul style="list-style-type: none"> - As the combination of theory and practice happens in the classroom or in written assignments, the quality assurance system does not have separate tools for the practical element.
FHJ (own survey)	<ul style="list-style-type: none"> - Central quality management ignores dual programs
UTA (own survey)	<ul style="list-style-type: none"> - UTA quality management system monitors the post-graduation employability (via graduate surveys), but there is no element other than post-internship feedback survey which could somehow be related to this topic.
DHBW (own survey)	<ul style="list-style-type: none"> - Central quality management integrates / ignores dual programs - The university is institutionally accredited. For the theory as well as for the practice study phase there are evaluation instruments. Evaluation takes place regularly every year using formative and summative instruments provided for in the universities statutes. - Students evaluate each course twice a year. The results have influence, content-related, as suggestions of improvement, which are part of the quality programme of the DHBW. - Additionally, regular quality circles are held consisting of professors, - external lecturers, students and representatives of the training companies. - The training companies also regularly talk with key accounts, are part of the expert commission: quality assurance at the DHBW through the Higher Education Act of Baden-Wuerttemberg – LHG §20a (4) Kommission für Qualitätssicherung und Fachkommissionen an der Dualen Hochschule60 (Commission for quality assurance and expert commission of the DHBW): regulates the composition of the expert commission: the same numbers

	<p>of representatives from professors of the DHBW as the representatives of the training centres and at least one student representatives; for the composition of the quality assurance committee: chairmen of the expert commission and the student representatives. LHG §19 Senate, at the DHBW §19 (2) & §20 a (4), chairmen of the expert commission are members of the Senate, equally divided into representatives of professors and training centres.</p>
--	--

3.5 Financial Participation by Corporate Partners

Table 5

	Financial Participation by Corporate Partners
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - UWC's Thutuka Programme, which funds students to engage in intensive study through a residential programme to enable students to become chartered accountants. Funding is obtained through the National Skills Levy and allocated by SETAs.
UMP (own survey)	<ul style="list-style-type: none"> - Students receive a monthly stipend from corporate partners. The Government through CATHSSETA (Culture, Arts, Tourism, Hospitality, Sports Sector Education and Training Agency) also pays students a stipend.
Wits (own survey)	<ul style="list-style-type: none"> - A number of mining companies donate generous and substantial donations to the School. These mining companies include Goldfields, Sibanye Gold, Anglo America and Exxaro in the recent years.
UCT (own survey)	<ul style="list-style-type: none"> - At both 2nd and 3rd year level, the host company is not obliged to make any contributions towards the programme. The students are also not remunerated for their time at the host site. - At the 2nd year level, the department organises and pays for the student's accommodation and daily transportation between the Host Company and arranged accommodation. - At the 3rd year level, students manage their costs.
CPUT (own survey)	<ul style="list-style-type: none"> - Corporate partners are encouraged to remunerate students by way of monthly stipends; the stipends are intended to cover the student's travel expenses. Corporate partner stipends vary from R1000.00 to R5000.00 depending on the Industry sub-sector the corporate partner i.e. Car Rental and Airlines offer stipends that are more generous but also require students to possess driver's licences and/or complete specific assessments which new incumbent staff would be subjected to e.g. Dangerous Goods. - A few Corporate partners are unable to provide stipends in this partnership we would encourage flexibility i.e. student work 3 days per week.
ULP (own survey)	<ul style="list-style-type: none"> - Department of Health and Social Development, Department of Basic Education, Thutuka Programme and Fundza Lushaka funds students to engage in intensive study through a residential programme to enable students to become educators, chartered accountants and health

	practitioners, social workers etc. Funding is obtained through the National Skills Levy and allocated by SETAs.
UEM (own survey)	There are no established protocols or regulation on whether and how should industry partners pay students in internship programs. This varies on case by case basis. In some cases, companies provide funded internships or offer scholarships to certain students often based in their own needs and priorities.
UZ (own survey)	Health Sciences: 6 years programme, from the 3 rd year students initiate internship at public hospitals Other courses: 4-4.5 years programme, students are hosted as interns one semester if companies are available
UL (own survey)	The University finances placements only in cases where payment is required but students do not receive any financial support neither from the university nor from the partners. Where specific working tools, such as personal safety equipment tools, are required, the university purchases these for the students.
DUK (own survey)	- Some employers pay the tuition fees for their employees, fully or partly.
FHJ (own survey)	- There is no financial contribution to the university. - Typically, there are no tuition fees for students at FH JOANNEUM. - The students get an average monthly salary from their companies between 650 and 890 Euro for 50% employment, depending on their experience and personal negotiating skills.
UTA (own survey)	- Depending on the Faculty and degree programme, it is possible to receive partial financial support for the internship period. - The financial support is paid to the employer and the employer pays this as a salary to the intern.
DHBW (own survey)	- The partners are not paying any fee to the university as the university is financed by the state. - However, the students receive a traineeship contract with the dual partner organisation and are paid a traineeship wage.

3.6 Composition of Dual Programmes

Table 6

	Composition of Dual Programmes
UNIVERSITY	
UWC (own survey)	- Work placements typically cover less than 25 % of the study programme although Health Science work placement programmes are higher.
UMP (own survey)	- D: Hospitality Management : 67% higher-education institution: 33 % work-place: = 100 % - D: Tourism Management : 84% higher-education institution: 16 % work-place: = 100 %

Wits (own survey)	- As it stands the school offers: 100% at higher-education institution: 0% work-place: = 100 %
UCT (own survey)	- At both 2 nd and 3 rd year the programs purely involves fieldwork facilitated by the host company. No academic input in the form of classes is planned. - Thus, it can be said that the program is 100 % university.
CPUT (own survey)	- The students undertake a once off placement for 6 months only. The remaining time is spent in lectures.
ULP (own survey)	- In the field of health sciences i.e. nursing programme student spend almost 40% in the field doing practical work and 60% in the classroom learning theory Education about 30% is spent in the field and 70% in classroom annually 1 st to final year same goes to social work students
UEM (own survey)	Tourism management: 4 years programme, from the 2 nd year, student follows 4 semesters of work internship at partner industry) Hospitality management: 4 years programme Mining engineering: 4 years programme
UZ (own survey)	Health Sciences: 6 years programme, from the 3 rd year students are expected to work in public hospitals, while at the same period attend classes. In the final year, students go for a full time internship in public hospitals. Other courses: 4-4.5 years programme, students are expected to work in corporate partners once off for 4-6 months full time i.e. no classes are scheduled during placement
UL (own survey)	Health Sciences : 75% higher-education institution: 25 % work-place: = 100 % Tourism and Hospitality : 73% higher-education institution: 27 % work-place: = 100 %
DUK (own survey)	- Students regularly can use documents and data that they have developed within their job.
FHJ (own survey)	- 2/3 higher-education institution - 1/3 work-place (incl. Bachelor Thesis)
UTA (own survey)	Not applicable.
DHBW (own survey)	- 50% theory studies in the university (2 x 3 month per year) - 50% practice phase in the dual partner organisation (2 x 3 month per year) - Students have a legal 6 weeks holiday period (20 days) per year. - All study programmes are “intensive” programmes with 210 ECTS for a 3 year Bachelor programme

3.7 Scheduling of Workplace and University Learning

Table 7

	Scheduling of Workplace and University Learning
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - These arrangements are made at Faculty level and vary according to different disciplines
UMP (own survey)	<ul style="list-style-type: none"> - The structure of the Hospitality programme is such that at first year (12 months), there is university learning whilst at second and third year there is 6 months university learning, respectively. Students do work-place learning for 6 months at second year level and 6 months at exit level (3rd year). Therefore, 1-year work-place learning and 2 years university learning to complete the qualification. - Tourism programme is such that there is university learning during the first, second and the last 6 months of their final year (exit level). Tourism students then do work-place learning for 6 months at exit level in the first semester of their third year of study. Therefore, 30 months university learning and 6 months' work-place learning.
Wits (own survey)	<ul style="list-style-type: none"> - School of Mining Engineering only offers full time undergraduate program. The study mechanism is the student attends for the duration of 10 months (contact learning and time for assignments and exams) and on the 28 week's vocational work period. These are all the Engineering Council of South Africa's (ECSA) requirements. During this vacation period the students are advised to go to corporate partners for vocational work. This period the students are exposed to mining environment and embark on a project pertaining to the operation they will be exposed to.
UCT (own survey)	<ul style="list-style-type: none"> - At the 2nd year level, the program takes place over a five-day visit to the host site. The program takes place during mid-term holidays and involves - a five-day visit to a chemical engineering practising site. The schedule of the programme depends on the host company; it can be a combination of short presentations followed by field activities (plant walkabouts, carrying out equipment measurements, sampling, drawing of process flow diagrams etc.) or all field activities. - For 3rd year level, the program takes place during either the mid-year vacation or summer vacation. The program involves a minimum of four-week stay at the host site. The scheduling includes no planned classroom activities, at least from the Department's side.
CPUT (own survey)	<ul style="list-style-type: none"> - The student is expected to work in Industry once off for 6 months full time i.e. no full time classes are scheduled during placement.
ULP (own survey)	<p>There is two types of workplace learning implemented at UL. The first one takes places during the studies, where students will have placements in the afternoon if they study in the morning and otherwise if the study in the afternoon. The second one, complimentary to the first one, takes</p>

	place as internship in the end of studies. This one last longer than the previous and the interns will have finished regular classes and will be writing their thesis alongside the internship
UEM (own survey)	No information received
UZ (own survey)	Health Sciences: 6 years programme, from the 3 rd year students are expected to work in public hospitals, while at the same period attend classes. In the final year, students go for a full time internship in public hospitals. Other courses: 4-4.5 years programme, students are expected to work in corporate partners once off for 4-6 months full time i.e. no classes are scheduled during placement
UL (own survey)	There are two types of workplace learning implemented at UL. The first one takes places during the studies, where students will have placements in the afternoon if they study in the morning and otherwise if the study in the afternoon. The second one, complimentary to the first one, takes place as internship in the end of studies. This one last longer than the previous and the interns will have finished regular classes and will be writing their thesis alongside the internship
DUK (own survey)	- Blended learning combining two days of classroom learning with online phases before and afterwards
FHJ (own survey)	- 1 st year university only, voluntary internship possible during holydays; - 2 nd and 3 rd alternating phases of approx. 3 months between university and corporate partner
UTA (own survey)	- The professional programmes (psychology, medicine, social work, and teacher) apply their own specific practises.
DHBW (own survey)	- 50% theory studies in the university (2 x 3 month per year) - 50% practice phase in the dual partner organisation (2 x 3 month per year) - Students have a legal 6 weeks holiday period (20 days) per year.

3.8 Comparison of Traditional and Dual Programmes

Table 8

	Comparison of Traditional and Dual Programmes
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - In all cases however, UWC offers traditional programmes and not dual programmes.
UMP (own survey)	<ul style="list-style-type: none"> - Currently the Diploma: Hospitality Management and a Diploma: Tourism Management programs (the latter to commence in 2019) are only delivered dually without running concurrently with traditional programs.
Wits (own survey)	<ul style="list-style-type: none"> - The School of Mining does not offer dual programs for the module. - Within the extractive/ mining industry, there are two South African universities offering Work Integrated Learning (WIL). These are University of South Africa (UNISA) and University of Johannesburg (UJ). - Both university offer WIL at diploma level, as well as Btech degree levels. - The students are thus required to complete an onsite Logbook. This book contains all the elements they need to be exposed to while in the mining operation and they need to have the task supervisor to sign off all completed tasks
UCT (own survey)	<ul style="list-style-type: none"> - The programmes mentioned here are part of the normal traditional undergraduate course offering - No comparisons can be made to dual programmes
CPUT (own survey)	<ul style="list-style-type: none"> - The Department of Tourism and Events offers a traditional workplace based learning model in which the student undertakes placement once off for 6 months during the placement period the student does not attend any lectures or submit any projects/assessments.
ULP (own survey)	The faculties of Health sciences and Humanities offer traditional programmes with placements, not necessarily dual studies.
UEM (own survey)	According to the different study plans, curricula and disciplines, the faculties and schools have the responsibility to define the schedules of sending their students to industry.
UZ (own survey)	So far there are no dual programs, except if the Health Science programme is considered as such.
UL (own survey)	The faculties of social sciences and humanities and of health sciences offer traditional programmes with placements, not necessarily dual studies.
DUK (own survey)	<ul style="list-style-type: none"> - All students study in the same mode. - According to Austrian legislation, a master earned in academic continuing education does not automatically qualify for a PhD program.
FHJ (own survey)	<ul style="list-style-type: none"> - The study course PTO is offered dual only. - Some courses at FH JOANNEUM, like nursing, physiotherapy and speech therapy, are of dual character but not called so.
UTA	Not applicable.
DHBW (own survey)	<ul style="list-style-type: none"> - Bachelor: Only dual programmes. - Master: professional Master programmes

3.9 Current Position and Future Development of Dual Programmes

Table 9

	Current Position and Future Development of Dual Programmes
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - UWC primarily focuses on academic programmes that are not dual study programmes. Previously there has been a concerted effort to combine academic study with community service but this is now no longer funded. - There is substantial policy pressure on research universities to respond to economic development but to date this has not resulted in the creation of dual study programmes. - UWC has however established a Business Innovation Unit, which promotes the development of third stream income to supplement decreases in public state subsidies to public universities. - Should dual study programmes be effectively funded, UWC would be supportive of dual study programmes.
UMP (own survey)	<ul style="list-style-type: none"> - The development of dual programs is widespread as the university grows. - As a comprehensive university, there is flexibility to offer dual programs, which are more technical, and career focused. From the labour market there is demand for dual programs since students tend to be 'hands on' as opposed to academic programs. - There is likely to be growth of dual programs as the institution aligns itself with trends in the labour market.
Wits (own survey)	<ul style="list-style-type: none"> - Currently for the undergraduate programmes there is currently no consideration for dual education - However, for the introduction of the Advanced Mine Ventilation Certificate as a qualification gives an indication of the possibility of converting the current Mineral Resource Management (MRM) and Mine Planning courses into a formal qualification.
UCT (own survey)	<ul style="list-style-type: none"> - Our "dual programmes" form an integrated part of our undergraduate course offering and we see them playing a pivotal role in our curriculum especially after having adopted a new project centred curriculum (launched in 2013); a curriculum in which class room taught theory is explicitly reinforced by design project work running in each semester of each academic year. - The experience, although short, offers students the opportunity to gain visuals of equipment sizes, orientation and arrangement, engage with plant personnel to acquire knowledge about being chemical engineers in the work place. - Given the sizes of the classes combined with current economic status in the country the near future of "dual programs" in the department is likely to involve doing away with one of the "dual programs", more likely the 2nd year level one due to the overall lack of impact the projects have on the host company and limited knowledge of the students at this level. - The 3rd year level program provides a great opportunity for our more experienced students to participate in more meaningful projects, as such this program might be restructured to adopt the 2nd year level model i.e. involve group placements as opposed to individual placement to maximise on available company placements. In this instance, the period of the program might have to be shortened.

	<ul style="list-style-type: none"> - Alternatively, the 3rd year program could be cancelled leaving only the 2nd year program.
CPUT (own survey)	<ul style="list-style-type: none"> - The Department of Tourism and Events currently does not employ a 'dual' internship model. The recurriculated Diploma in Tourism Management has taken key Institutional and Industry recommendations on board but will still closely resemble a traditional model. The Department of Tourism and Events is open to identifying leading workplace based practices both locally and abroad which may enhance student employability and strengthen Industry relations.
ULP (own survey)	<p>As stated that our programmes are not accurately dual programmes as the definition entails but our programmes in health sciences and humanities are similar to those of dual study, so as such should industries in South Africa can come on board to support dual, UL would be supportive of dual study programmes.</p>
UEM (own survey)	<ul style="list-style-type: none"> - UEM primarily focuses on academic programmes that are not dual study programmes. Currently there have been efforts to partner with industry, particularly the booming extractive discoveries of natural resources such as gas and Oil. - There is considerable political pressure on universities to respond to economic development and seize the opportunity of the discovery of natural resources, but to date this has not led to the establishment of dual study programmes. However, there has been a recent attempt between the University and the Multinational Company Anadarko to offer a joint Masters in Petroleum Engineering. - UEM has however established an Innovation Unit, to promote closer links between university and industry. <p>Should dual study programmes be effectively sponsored, UEM would be supportive of dual study programmes.</p>
UZ (own survey)	<p>So far there are no dual programs, however the university is preparing to embark as part of LaTFURE project.</p>
UL (own survey)	<p>The University does not have dual programmes in place. What is in place is a traditional programme that has placements and internship embedded for practical learning. We are looking at the introduction of dual studies at the Faculty of Social Sciences and Humanities, Tourism and Hospitality programme, as pilot, if the Ministry approves and amends the current higher education legislation.</p>
DUK (own survey)	<ul style="list-style-type: none"> - Danube University does not label any of its programs "dual", even though most programs combine work-experience and academic learning. - While regular master programs always have 120 ECTS in Austria, master programs in academic continuing education can cover fewer ECTS if this international practice. - There is a possibility that these regulations change. As soon as all master programs have to cover 120 ECTS, we expect that continuing education programs will try to integrate the work experience of their students into the workload of the curriculum.
FHJ (own survey)	<ul style="list-style-type: none"> - Actually, at FH JOANNEUM there is one dual bachelor program (PTO) and one dual master program (ENP). A second master program will start 2017 (food technology LEM). - The management and other study courses are not very interested in dual training programs. (Rather in part-time courses.)
UTA (own survey)	<ul style="list-style-type: none"> - Not applicable, since there are no dual study programmes. - The internships are becoming more common. It is also more typical to have two internship periods during the studies that it was before.
DHBW (own survey)	<ul style="list-style-type: none"> - Widespread, fully dual - Very good reputation, more than 9000 dual partners, 80% success rate, after 3 years of graduation more than 80% are still with their dual partner organisations - Moderate growth, about 3-5% growth rate per year of student intake

3.10 Barriers to Future Development of Dual Programmes

Table 10

	Barriers to Future Development of Dual Programmes
UNIVERSITY	
UWC (own survey)	<ul style="list-style-type: none"> - Capacity within research universities to engage in dual study programmes is minimal - Sub-qualification frameworks dealing with workplace learning and higher education respectively (under QCTO and CHE) do not relate to each other which makes the development of dual learning programmes more difficult - It is unclear as to whether the DHET is prepared to make resources and personnel available for the dual system within research universities.
UMP (own survey)	<ul style="list-style-type: none"> - The major obstacle is companies that are reluctant to take students for work-place learning for various reasons either because they do not want to pay them or take responsibility thereof. - In South Africa university-industry collaboration is constrained by historically based cultural and institutional barriers, which take time to overcome. - Furthermore, programmes with an academic focus do not have work-place learning in their curriculum. They are 100% theoretical.
Wits (own survey)	<ul style="list-style-type: none"> -The Engineering Council of South Africa (ECSA) currently requires that the BSC engineering degree level to have room for two 8 weeks vocational period and the entire program to be full time study mode based and is heavily reliant on academic learning. -It is expected that after graduation the graduates get further exposure through acquiring government tickets such as the rock-breaking certificate and the mine manager's certificate.
UCT (own survey)	<ul style="list-style-type: none"> - Finding placement for large sized classes in a troubled economic climate that forces companies to cut down on costs and focus on core business will be the biggest challenge for dual programs in the near future. This is likely to cause the department to relax the graduation pre-requisite tag associated with the programs. - Limited resources such as access to the internet and information in the form of journal papers and books from the UCT library due to lack of data hampers the students' ability to deliver comprehensive project reports that add valuable academic perspective to the projects given to students. - The short periods at the host, company is likely to make the host companies view the programs as not adding value to their operations leading to reluctance to host our students especially at the 2nd year level.
CPUT (own survey)	<ul style="list-style-type: none"> - Corporate partners may be reluctant to participate in placement cycles of less than 6 months.

	<ul style="list-style-type: none"> - Corporate partners may also assign students menial tasks and duties, which do not require a significant training investment. - Corporate partners are quite selective and have high expectations often insisting on 'top student', which need to meet certain criteria. - In addition, corporate partners in Tourism ad Events contend with seasonality so a student placed in Industry outside of peak season would miss invaluable interaction/exposure with guests or to events.
ULP (own survey)	<ul style="list-style-type: none"> - Capacity within research universities to engage in dual study programmes is minimal, and as such Sub-qualification frameworks dealing with workplace learning and higher education respectively (under QCTO and CHE) do not relate to each other which makes the development of dual learning programmes more difficult. - It is unclear as to whether the DHET is prepared to make resources and personnel available for the dual system within research universities. - The major obstacle is companies that are reluctant to take students for work-place learning for various reasons either because they do not want to pay them or take responsibility thereof. - In South Africa university-industry collaboration is constrained by historically based cultural and institutional barriers, which take time to overcome. <p>Furthermore, programmes with an academic focus do not have work-place learning in their curriculum. They are 100% theoretical.</p>
UEM (own survey)	<ul style="list-style-type: none"> - In Mozambique there is a strong potential to develop dual studies. The introduction of dual studies would be an opportunity to strengthen the linkages between University and Industry. The introduction of dual studies would probably face challenges with the (local) industry involvement/participation, since the experience with such kind of programs is fairly new. However, if a conducive regulatory framework is put in place with the incentives for all stakeholders there is a great chance that dual studies implemented.
UZ (own survey)	<p>There is a lack of data and information on the (1) industry's expectations with regards to the outcomes of academic programmes; (2) volume of industry's demand for university graduates; and (3) industry's preparedness to embark on employee training, collaborate with academic institutions in the formulation, implementation, evaluation and accreditation of courses.</p>
UL (own survey)	<p>The national legislation does not cover this model of study, which, if not amended, will hinder the progress towards the introduction of dual programmes; lack of recognition of dual programmes graduates' certificate due to it being unfamiliar to the employers or other higher education providers, and a lack of corporate partners willing to collaborate without state incentives, such as reduced taxes, in the long run.</p> <p>Few corporate partners have human capacity for setting up proper learning environment for the intended study outcomes. A lack of state and university funding schemes for students undertaking placement</p>
DUK (own survey)	<ul style="list-style-type: none"> - We would not expect that Danube University would label programs as "dual" in the future, as this would partly duplicate the term "academic

	<p>continuing education”. This would be difficult to understand for prospective students.</p>
FHJ (own survey)	<ul style="list-style-type: none"> - There is no legal definition for dual study programs right now. - There are still reservations about the academic adequacy of dual education. - Companies usually do not know the dual education on tertiary level, so they are not prepared for. Companies often worry about support efforts.
UTA (own survey)	<ul style="list-style-type: none"> - In Finland, the major emphasis has been placed on development of Recognition of Prior Learning (RPL), not in development of actual dual programmes. Finnish education system does not recognise such a concept tertiary level but it does so in secondary level where there exist “apprenticeship training” equivalent to dual study programmes). - At least now, there does not seem to exist neither political willingness nor practical necessities to introduce such programmes, as the topic has been completely absent in the agendas and initiatives related to reforming higher education.
DHBW (own survey)	<ul style="list-style-type: none"> - No barriers except for state finances. - Until 2020 the state finances are guaranteed growing by 2-3 % per year, after that a new finance framework will have to be negotiated for all state universities in Baden-Wurttemberg

4.0 Study on the Demands and Expectations of the extractive and tourism industries in Mozambique and South Africa

4.1.1 TOURISM AND HOSPITALITY

The tourism system in Mozambique is a complex network of services and facilities offered in different geographical spaces in line with the demands in the tourism sector. The attracting factors range from essential services to the natural uniqueness of many tourist destinations. Tourism destinations compete with each other in order to attract as many tourists as possible and to retain them for as long as possible increased revenue collection in the whole chain of services with direct and indirect benefits for the local economy.

There are two main factors of competitiveness in Mozambique's tourism sector. The first factor relates to the qualification of the workforce, while the second factor relates to the quality of the services provided for a memorable tourist experience and which influence the selection of destinations by tourists. These two factors are referred to as priorities in the Strategic Plan for Tourism Development of Mozambique (PEDTM, 2016-2025). The two factors drive the need to increase the quality of services offered in Mozambique due to the importance of tourism sector for sustainable development of the country. (Lemos, 2017).

Beira city is, by his strategic location in the heart of Mozambique, SADC gateway and services business center. Moreover, it is also the gateway to Gorongosa National Park, Coutadas 10,11, 12 and 14, and Marromeu Special Reserve, which are included in the international references for world tourism. Despite these references and having a network of substantial accommodation and catering establishments, the quality of services provided falls far below the quality standards provided by other service providers in the region and the world (Lemos, 2017).

In response to the first priority factor on workforce qualifications, Zambeze University conducted skills needs assessment for the tourism sector and found the following.

- Due to skills needs in the tourism sector, there is a need for a course in Tourism and Hospitality at a lower level than the university degree level
- Industry representatives unanimously agree that they prefer short courses than the degree programs for their employees. They are unwilling to wait for 4 years to have their employees ready.
- There is need for designing the curriculum in a way that enables this particular audience (employees in the tourism sector) to be admitted in selected modules/disciplines for a certificate, with credits, with the possibility for enrolment in additional modules/disciplines and credits for a degree qualification. In such a case,

the faculty would require the student to submit an internship or work critical report before the degree is awarded.

Zambeze University recently received additional feedback from two Tourism companies, who indicated that they have employed university graduates. Industry response noted that they were looking for technical competences in graduates as well as the capacity to innovate. A company that had employed a graduate in the tourism and hospitality field felt that the graduate had received appropriate training that fitted the graduate for this market and another company noted that a graduate was highly qualified in theoretical issues. Both companies felt the graduates were able to be immediately productive after starting work. The companies also indicated they would consider working with the university to design undergraduate programmes linked to industry needs and consider funding these students on such a programme.

In response to development of the quality of the workforce in Mozambique's Tourism and Hospitality industry, Lurio University's Faculty of Social Sciences and Humanities, which is responsible for training Tourism and Hospitality professionals, organised a workshop on the Mozambique Island, on the 16th of October 2017 aimed at disseminating the LaTFURE dual studies initiative among the local stakeholders. The Mozambique island municipality has around 50 000 inhabitants and Lurio University is the only higher education provider in the location. In terms of tourism and hospitality business, there are not more than 15 small and medium enterprises on the island. The LaTFURE dissemination workshop was attended by 30 people comprising of business persons, scholars, local government and city representatives. This workshop introduced the dual studies model to the participants and sought to capture their thoughts on the dual studies model, using individual questionnaires and group discussions. The questionnaire was applied to the business people only while, group discussions were held with all attendants. The overall thoughts on dual studies were positive although there are some concerns and hesitations as reported next.

The first question had to do with the *interests of businesspersons' in the dual studies* as presented to them in the opening remarks by the LaTFURE coordinator Prof. Caetano. All the business people present showed interest in the dual studies model, but 20% of them said that they could not finance it due to their financial weakness.

The next question had to do with their *capacity for hosting students*. Again, due to the size of the business in hospitality and tourism realm, the respondents stated they could host only two on average at any one time.

We asked them about the *type of tasks they had for students to perform*, the businesspersons responded that students would do reception and bar work, administrative and management assistance, maintenance and tour guiding and restaurant.

It was noted that the business enterprises employ an average of seven people. On the issue of the *job vacancies that were difficulties to fill*, they mentioned the following posts were difficult to fill: reception, logistic, administration and public relations. The main challenges in filling these positions resulted from: very low English proficiency, low professional skills and bad attitude and behaviours towards the job and the clients. Moreover, the employers were not happy with their employees because of issues such as bad attitude and behaviour towards the job and clients, insufficient academic background and lack or low proficiency in English.

Lastly, 80% of the enterprises represented in the workshop have been *cooperating with educational institutions* by opening opportunities of internships to their students.

Group discussion comprised of six members each, discussing four questions. The first question sought *insights into the challenges that our faculty will have to face to introduce dual studies*. The overall feeling was that, as long as the faculty creates all conditions for the implementation of the dual studies model, it would be successful. The conditions necessary to the success of the project in Mozambique Island refers issues such as: (i) students and tutors/supervisors attitude and behaviour training within the context of dual studies; (ii) the contract between the student and the enterprise must be designed carefully with regards to payments, where other ways of payment should be considered than only monetary; (iii) consider carefully the fact that the tourism and hospitality business in Mozambique Island is predominantly small and medium size; (iv) tax incentives to the partners willing to collaborate and seeking other partners outside Mozambique Island within the northern region must be considered as well.

Also discussed was the possibility of *involving the informal sector in project implementation*. We sought their thoughts on the possible advantages and disadvantages of involving the informal sector. They were cautious in their answers. Although they believe this is a project with strong potential for producing ready-to-work graduates, they feel that the informal sector could harm the quality of education aimed by the project because of the level of informality. The informal sector lacked the all kinds of capacity to tutor students in a positive manner and payment of students would be a critical issue to deal with. On the other hand, however, students would be exposed to the dynamics of the local market of tourism and hospitality. This exposition could enable them to learn traditional culinary; there could be

knowledge exchange between academia and communities and hopefully this interaction would help upgrading informal businesses to formal ones.

To measure the attendants' understanding of the possible impact of dual studies, we asked them to discuss the possible advantages of this project for the local economy. They said that the first direct advantage would be the availability in job market of high quality graduates in the field of tourism and hospitality. This would lead to the qualitative improvement of services provided by the hotels and restaurants, which would attract more tourists and clients and increase revenues. Overall, the tourism and hospitality sector would grow in quality.

The tourism and hospitality sector, according to them, would be positively impacted by this project as the services would thereafter be provided on a scientific base and with an international approach and quality.

Based on the answers, discussions and contributions, it can be concluded that Lurio University's local partners will support the dual studies project as long as their concerns are carefully addressed. Issues such as the contract between students and enterprises, fiscal incentives to the partners, preparation of students and tutors or supervisors for the project, and the limitation of this sector in Mozambique Island need to be carefully thought out.

Tourism is the fastest growing economic sector in South Africa, contributing close to 7,1% of the GDP. A skilled human resource platform is key to growing tourism, as well as ensuring high qualities of service in the tourism industry. In this regard, the South African government supports skills development for the tourism sector through legislation, funding and accreditation and monitoring of training providers.²²

The University of Mpumalanga as one of the training providers in the tourism sector, offers a Diploma in Hospitality Management and is hoping to launch an Advanced Diploma in Hospitality Management from 2018. Moreover, an application for accreditation to offer a Diploma and Degree in Tourism Management and Hospitality Management, respectively, has already been made to the DHET. It should be noted that a range of universities offer a broader range of hospitality offerings than those mentioned here.

The nature of the Hospitality qualification which is 'hands on' requires industry relationships for practical training experience. The school of Hospitality and Tourism ensures this by

²² https://www.environment.gov.za/sites/default/files/docs/10yyearsreview_tourism.pdf

having an Industry Advisory Board (IAB) consisting of academics and industry stakeholders that meet once per term to discuss curriculum issues and also gives feedback on students' performance on WIL. There, various MOUs and MOAs exist between the school and organisations such as Tsogo Sun Group of Hotels, City Lodge Group, Phelophepha Transnet Rail, Protea Group, Chill Pepper Hotel, Mpumalanga Parks and Tourism Agency, Kiaat Hospital, Department of Correctional Services and Sun International. UMP is also in the process of signing an MOU with SANPARKS. SANPARKS already is listed under important industry partners for the LatFURE Project. Therefore, this collaboration will further strengthens LatFURE's endeavour to maintain partnerships between higher learning institutions and industry. The Mpumalanga Tourism and Parks Agency has declared willingness to work with UMP once the Tourism Diploma starts at UMP.

Communication between the school and industry is an integral component of enhancing quality education as such the school endures that there is constant communication with industry. Feedback from students on WIL is normally received every month through logbooks that are signed by students' mentors on WIL to assess students' performance. Monitoring is done every two months when a WIL coordinator makes a follow up visit to the work station to monitor the students and also receive feedback from the mentors. Then an Industry Advisory Board meeting is held at the end of each term to discuss, inter alia, curriculum issues, and to further strengthen relations.

Industry has recommended that the School introduces a non-credit bearing Foreign language which is Portuguese since Mpumalanga receives a high number of Mozambican tourists and communication is a challenge with students. UMP has started a certificate bearing short course in Portuguese offered on weekends to registered staff and students. Industry also recommends that the school puts more emphasis on Problem Based Learning (PBL) as opposed to Outcome Based Learning (OBL) as PBL acquaints students with problem solving skills in industry. Also a recommendation to invite industry personnel, time and again in classes through 'guest lectures' to ensure that the curriculum is current with industry trends.

Since the Hospitality and Tourism industry are under the ambit of CATHSSETA there is a need for the school to maintain partnerships with the SETA. The school has a relationship with CATHSSETA which offers internships to unemployed UMP Hospitality graduates. CATHSSETA also funds students with monthly stipends during Work Integrated Learning (WIL). This reduces students drop out rates and improves through put rates. Currently, an application has been sent by the school requesting for bursaries from CATHSSETA.

Although relations are maintained through the aforementioned structures there is still room for improvement. There is a need to involve many more stakeholders from other

establishments like guest houses, bnbs, lodges which play key roles in the hospitality and tourism industry. The current focus has been centred on hotels yet research shows that bnbs, lodges are modern day engines of economic growth and also reduce unemployment. Furthermore, there is a need to involve government through the National Department of Tourism (NDT). There is also a need to involve industry personnel in university structures such as committees. There is also a need to offer more short courses in cooking, housekeeping to the community.

Beyond the teaching-research-entrepreneurial taxonomy, there is a need to shift focus toward creating developmental universities which collaborate with industry, not necessarily with a focus on commercialization and profit-making but rather with the broader purpose of contributing to social and economic development through Work Integrated Learning.

CPUT mandates all Departments to engage with key Industry members by way of an Advisory Committee which meets once per Semester. Advisory Committees are vital to strengthen Institution/Industry relationships and used as a soundboard to discuss pertinent curricular and Industry matters.

The Co-operative Education Coordinator (where possible) conducts an Industry site visit a minimum of once per placement cycle. The visit further cements relationships. The Corporate partner is expected to appoint a mentor/s who serve as supervisors to students. Supervisors are required to monitor and evaluate the students' progress.

4.1.2 EXTRACTIVE MINING INDUSTRY

For the training of Engineers in the extractive mining Industry, the South African Higher Education Qualifications sub-Framework (HEQSF) and the requirements from professional bodies such as Engineering Standards Generating Body (ESGB) and Engineering Council of South Africa (ECSA) calls for adherence to HEQSF requirements and alignment to ECSA pathways towards various categories of professional registration. In this regard, programmes offered by mining departments at universities should consist of theoretical, practical/laboratory and work integrated learning (WIL) modules to ensure a purposeful and structured set of learning experiences that lead to a qualification (Nel, 2014).

On the issue of the demand for mining related qualifications, Nel (ibid) states that a wide range of skills and knowledge is required in the extractive mining industry to find and evaluate new ore reserves, then design, establish, operate and rehabilitate mines. Therefore, different types of miners are needed for surface and underground mines. This because, underground mines require expertise in areas such as mine environment control, which may not be required to the same extent in surface mines. The skills needs for labour

intensive mines also differ from those that are mechanised. Mining education is driven by complex work environments that require input from various types of supervisors, foremen, managers, technicians, technologists and engineers to ensure safe and viable mining operations while achieving the triple P standards on profit, people and planet.

At Wits University, the undergraduate level mining programmes focus on the BSc (Eng) and short courses which support the mining industry by offering a range of specialisations relevant to the industry's skill needs. This is through Wits University's Centre for Sustainable Mining and Industry (CSMI) which assists the mining industry by promoting health and safety issues and implementation of sustainable development. Additionally, the Centre for Mechanised Mining Systems (CMMS) continues to assist the mining industry on mechanisation and automation initiatives. Wits University staff also participate in professional bodies such as the Engineering Council of South Africa (ECSA); South African Council for Natural Scientific Professions (SACNASP); South African Institute of Rock Engineers (SANIRE); Geological Society of South Africa (GSSA); South African Geomatics Council (sacg) and The Southern African Institute of Mining and Metallurgy (SAIMM) to name a few.

5.0 Discussion and Conclusion

The survey results indicate that there are differing definitional understandings and institutional approaches to dual studies. While Austria and Finland reported not having a legal definition of dual studies, South Africa relates dual studies to sandwich programmes which denotes higher education programmes containing a work placement component of varying durations. Germany on the other hand defines dual studies as cooperative education, which is a type of PHE in which public and private sector organisations directly cooperate with the higher education sector to deliver the programmes. Despite the differing definitions of dual studies, the value of dual studies for the development of students' job readiness and employability skills is widely practised in one form or another by the 9 institutions who responded to LaTFURE's questionnaire 2.1. For example, DBHW offers all its programmes dually, while FHJ has one programme offered in the dual mode. UMP and CPUT offer national diplomas containing a significant work placement component ranging between six and twelve months. UCT and Wits reported relying on site visits and vacation work placements to acquaint their students with the world of work. DUK being an institution specialising in postgraduate studies relies on students' work experience for professional development as majority of their students work. At UWC and UTA dual studies are a preserve of traditional programmes such as health, education and law.

The survey results show what dual study programmes may be offered by research universities, comprehensive universities, universities of technology, universities of applied sciences. The dual programmes offered in these institutions include: diplomas, bachelor's degrees and masters degrees, in fields such as: business, media, medical studies, management, entrepreneurship, engineering, education, law and social sciences such as psychology.

National laws in Austria, Germany, South Africa and Finland regulate specific aspects of dual studies programmes for different qualification levels, specialisation fields or types of higher education institutions. Accreditation regimes in these countries vary in purpose and scope. Whereas accreditation is not required for programmes in higher education in Finland, institutional quality audits are conducted by the Finnish Education Evaluation Centre. South Africa like Germany and Austria has both national and institutional provisions for guiding the planning, implementation and quality audit of courses.

With regards to the current position and future development of dual programmes, it is expected that dual programs will continue growing in Germany, Austria due to their important role in the development of hands-on skills in the 21st century. In South Africa and Finland, dual studies is a preserve of traditional specialisations such as health science and education with a positive push for job-ready graduates in South Africa and increased use of internships in Finland.

The barriers to the future development of dual programmes relate to the cost of organising dual programmes, limited places for attachment in organisations for large numbers of students, reluctance of organisations to accept or pay students, government policies and resources for supporting dual programmes, legal, quality and curriculum challenges.

The final benchmarking report has identified an enabling framework of national systems level policies, institutional engagement in workplace-related programmes that correlate with dual study programmes and evidence Tourism and Mining extraction industry engagement with universities in Mozambique in South Africa. It therefore serves as a useful platform for further and detailed engagement in the development and implementation of dual study programmes in these sub-economic sectors.

6.0 Recommendations

Recommendations include the following for WP 2 of the LaTFURE Project at systemic national levels, insitutional levels and for the LaTFURE project and provide a basis for further in-depth discussion in future Work Package phases.

Sytemic national recommendations

- Further discussions with the South African Qualifications Authority on the status of a Regional Qualifications Framework for the SADC Region should be initiated in order to align this project with emerging policies that could facilitate dual learning. As Mozambique and South Africa are both SADC countries, this may provide further synergies for the development and implementation of dual study programmes and have a further impact for SADC member states.
- Government education and training authorities should be centrally involved in discussions to facilitate the piloting of dual studies programmes in Mozambique and South Africa so that bureaucratic requirements for the establishment of new programmes do not exceed the available project time left for this important systemic intervention.

Institutional level recommendations

- Specific information on the specific focus of dual learning mining qualifications in Mozambique may need further investigation
- Potential areas of collaboration between Mozambique and South African institutional approaches to dual learning may merit further discussion between partner institutions

LaTFURE Project recommendations

- The completion of the final benchmarking report has involved some project delays but institutional trust and collaborations have been forged during this process, which may allow partner institutions to mutually expedite the existing time frames for further work packages.
- Based on the final benchmarking report, there are clear areas of expertise in Tourism and Mining qualifications and industry expertise that could be drawn on to facilitate and expedite the development of dual studies programmes for the project.

Bibliography

Kerka, S (1989) Cooperative Education: Characteristics and Effectiveness. Eric Digest. No 91

Mattos & Lemos, I (2017) Gestão de Qualidade Total em Turismo – aplicação practica em estabelecimentos de alojamento e restauração na cidade da Beira. *Zambeze University Project Financed by the National Research Foundation of Mozambique.*

Nel, W.P (2014) Towards a structured PQM decision-making approach: rethinking the Mining Engineering PQM at an open, distance e-learning university. *The Southern African Institute of Mining and Metallurgy 2014 SOMP Annual Meeting*

Nickel, S, Püttmann, V. 2015: Qualitätsentwicklung im dualen Studium. Ein Handbuch für die Praxis. Edited by Volker Meyer-Guckel, Sigrun Nickel, Vitus Püttmann, Ann-Kathrin Schröder-Kralemann. Essen: Edition Stifterverband.

Patrick, C-j., Peach, D., Pocknee, C., Webb, F., Fletcher, M., Pretto, G. 2008. *The WIL [Work Integrated Learning] report: A national scoping study [Australian Learning and Teaching Council Final report]*. Brisbane: Queensland University of Technology.

RSA Department of Education. (2007) The Higher Education Qualifications Framework. *Government Gazette* 30353. 5, October 2007.

RSA Department: Higher Education and Training (DHET). (2013) White Paper for Post-school Education and Training: Building an Expanded, Effective and Integrated Post-School System. Government Printing Works, Pretoria.

Ratermann and Mill, (2015)

Republic of South Africa. (2011) *Work-Integrated Learning: Good Practice Guide*. Pretoria: Council on Higher Education.

Wolter et al. (2014)

Appendix 1 – Questionnaire 2.1/2.2/2.3

Introduction

These questionnaires are the basis for Deliverable 2.2 “Review of South African institutional frameworks (system and institutional level) for establishing dual study programmes”.

According to the project description, UWC provides Activity 2.2 with support of the South African partner institutions.

We ask each South African partner to provide 3+ pages of information (1+ page national level, 2 pages institutional level). Where applicable, please provide sources and links.

Information in the “Answers” column are meant as a stimulus and explanation, what information should be provided. Please delete these contents when filling in the form.

Definitions

When we use the term “dual study program”, we refer to study programs where students do parts of their studies at a higher education institution and parts at a corporate partner.

Learning at a corporate partner goes beyond a one-time internship, and students receive credits for it.

When we use the term “corporate partner”, we refer to providers of work-place learning.

This can include non-profit and public institutions, depending on the focus of the study program.

Structure of the report (planned)

Chapter	No. of pages
<i>1. System level</i>	4.5
a. Legal setting	1.5
b. Current delivery of dual programs	1.5
c. Future development of dual programs	1.5
<i>2. Institutional level</i>	7.5
a. Contractual setting	1.5
b. Inter-institutional management	2.0
c. Current delivery of dual programs	2.5
d. Future development of dual programs	1.5
Total	12

Questionnaire 1 – National Level

To be filled in by partner institution DHET, South Africa (target number from project plan: 3)

Questions	Answers
Which definitions for dual programs are in use in your South Africa?	Definitions provided by the state? By voluntary associations or lobby groups?
How does higher education law regulate work placements within study programs? Does it support dual programs?	Regulations on work-place learning within study programs in general, regulations for dual programs
How do accreditation regimes regulate work placements within study programs? Do they support dual programs?	Regulations on work-place learning within study programs in general, regulations for dual programs
In which disciplines do you have dual programs in the country?	Traditional areas for dual studies: teacher-training, medical field, ... New areas for dual studies: business, technical field, ...
Which types of institutions offer dual programs?	Universities / universities of applied sciences, polytechnics
What is the current position and future development of dual programs in the national system?	Widespread or rare, used names to describe dual programs (e.g. cooperative programs) Reputation at higher education institutions and on the labour market How would you forecast the future development of dual programs in your country?
Which barriers do you see for the future development of dual programs in your country?	From the state, from higher education institutions, from companies

Questionnaire 2 – Institutional Level

To be filled in by partner institutions: UWC, UCT, CPUT, Wits, ULP and UMP (target number from project plan: 5)

Question	Answer
The information provided in this questionnaire refers to	Program(s) / faculty, campus / entire institution?
What is the nature of the relationship between the higher education institution and corporate partners in dual programs?	Description of contracts between university, corporate partners, students? On study program, department or program level?
How does the university manage the cooperation with corporate partners?	Joint study committee, planning and supervision of workplace learning by university, study program manager, corporate relations office ... Quality management on program level, including the management of educational quality of work-place learning
How does the quality management system regulate work placements within study programs? Does it support dual programs?	Central quality management integrates / ignores dual programs Tools, instruments
Financial participation by corporate partners	Financial contributions to the university? Remuneration of students' work?
Composition of dual program(s) program	% higher-education institution: % work-place: % other (define): = 100 %
Scheduling of work-place and university learning	Morning/afternoon, school and work days per week, months at university + months at work-place, ...
Comparison of traditional and dual programs	Do you deliver programs dually and traditionally at the same time? If yes, do dual and traditional students have the same exams? Is the duration of studies the same for traditional and dual studies? Qualification for consecutive studies (e.g. do dual bachelors qualify for academic master programs)?
What is the current	Widespread or rare

<p>position and future development of dual programs in your institution?</p>	<p>Reputation within higher education institution and on the labour market How would you forecast the future development of dual programs in your institution?</p>
<p>Which barriers do you see for the future development of dual programs in your institution?</p>	<p>From the state, from academics, from university managers, from companies</p>