University of the Free State
Learning and Teaching Strategy
2025 - 2030

T: +27 51 401 9111 | E: ctl@ufs.ac.za | www.ufs.ac.za/ctl

Inspiring excellence, transforming lives through quality, impact, and care.

VISION 130
Renew and Reimagine for 2034

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS
CENTRE FOR TEACHING AND LEARNING (CTL)

Table of Contents

1. Introduction

In the context of increased geo-political tensions impacting procurement and institutional autonomy, the world currently also faces poly-crises, such as climate change, poverty, inequality, and climate change. In the midst of these contextual and world-wide crises, higher education additionally faces three critical challenges, namely financial sustainability. increasing costs, and a need for leadership that is committed to pragmatic transformation, social justice, and access. There is also a dire need for greater commitment to quality and transformation in order to address challenges in governance, management and leadership, access and success, equity, institutional cultures, progressive and inclusive teaching, and institutional equity (Department of Higher Education and Training (DHET), 2024).

Indeed, South African higher education is characterized by increased homogenisation in the system because of a focus on rankings, which contribute to a lack of systemic differentiation. There are also serious questions about the quality of learning and teaching in the sector (Habib, 2024). It is pivotal that higher education institutions should be the engines of social and economic transformation and leaders in finding ways to meet the Sustainable Development Goals (SDGs) (Rensburg, 2024).

Despite these challenges, however, stakeholders within the higher education sector, especially those whose primary concern is teaching and learning, have the opportunity to foster public-private partnerships and South-South collaboration through collaborative programmes. Digital transformation may also provide opportunities to develop new financial sustainability models, which can leverage technology to enhance the sector's resilience. A global focus on sustainability can create 100 million jobs in Africa by 2050 due to its focus on the green economy, which requires skilled professionals in related industries.

The Quintuple Helix Model (QHM) and concepts like the fourth-generation university are innovative approaches for higher education. The QHM approach integrates academia, industry, government, civil society, and the natural environment to foster sustainable development and address complex societal challenges such as climate change. It focused on innovation and knowledge dissemination, thereby promoting a more inclusive and sustainable approach to economic and social development (Borrero & Yousafzai, 2024). Dumoulin and Malkov (2024), for example, indicate that the fourth-generation university is actively engaged in co-creation processes with industry, governmental bodies, and civil society through trusted partnerships, fostering vibrant local innovation ecosystems. It is a global university, which

embraces open innovation and is embedded in the local innovation ecosystem, aiming to tackle societal challenges and catalyse regional economic growth (p. 3). Quality learning and teaching is foundational to these innovative approaches.

2. Purpose

The purpose of this strategy is to:

a) Create alignment and enhance academic excellence through high-quality learning and teaching.

In competitive local and international higher education landscapes, quality teaching and learning play a vital role in differentiating institutions from each other (Altbach & Salmi, 2011), and South African universities have to address serious questions about learning in the system (Edwin, 2024). By aligning with Vision 130 and the UFS strategic plan 2023-2028, this Learning and Teaching Strategy (LTS) focuses on creating a learning and teaching experience at the UFS, which will leverage research-led and evidence-based approaches to attract high-calibre students and staff and engage them in a vibrant learning and teaching environment.

b) Develop a signature learning and teaching environment that optimizes technology for flexibility and responsiveness and optimizes engagement and success for employability.

Higher education is currently confronted by the need for a paradigm shift regarding use of technology in learning and teaching. This paradigm shift has been largely driven by the COVID-19 pandemic and the advances made in artificial intelligence (especially Generative AI) (O'Dea, 2024). A combination of a research-led and evidence-based approach to curriculum design is necessary, with a focus on a deeply contextualized teaching and learning environment. Such a focus will enable significant learning experiences, which will entice students to pursue postgraduate degrees and qualifications at the UFS and embrace lifelong learning (Fink, 2013). The importance of improving student success is a core focus of higher education, locally and globally, with socio-economic mobility being introduced in classification systems (Lederman, 2024).

c) Intentionally design and align the learning and teaching infrastructure for financial sustainability and social impact.

Universities need to be leaders in creating societal sustainability through engaged scholarship and work-integrated learning (Kigotho, 2024). In addition, a decline in government spending necessitates the consolidation of infrastructure and optimization of support through collaboration and innovative cost-sharing approaches based on impact analyses. A system driven by data analytics will be vital to optimize efficiency.

3. Philosophy of learning and teaching

This section outlines the philosophical assumptions or beliefs about learning and teaching that underpin this strategy and align with the values of the UFS.

3.1 Learning-centredness as the key to excellence

In a post-pandemic world, institutions' focus on learning has increased, enabling lifelong learning, which is an integral part of the development of financial sustainability models (Hunt & Chalmers, 2021; UNESCO, 2024). Indeed, learning has always been at the heart of any university's existence. Mintz (2024) argues that a learning-centred university can create and transform impact as well as gender equality in today's polarized world. In a learning-centred university, both research and teaching must focus on promoting learning. For academics, learning is often achieved through research using specific methods and research criteria. For 21st-century students, learning is achieved through teaching focused on facilitating learning using specific methods, media, and criteria (Light, Cox & Calkins, 2009). Appendix 1 provides a comparison of teacher–, student–, and learning-centred teaching.

The crucial importance of the nexus between learning, teaching and research is vital for enhancing quality (Hordosy & McLean, 2022). This nexus can find expression in research-based teaching (RBT) approaches, which intentionally integrate research activities as part of pedagogy (Zou & Chen, 2024). This approach can be integrated into work-integrated learning approaches.

3.2 Care as key to an inclusive and diverse environment

A caring environment where people (students and staff) feel a sense of belonging is essential for effective learning and teaching and for sustaining democracy (Swartz, Gachago & Belford, 2018; Tronto, 2018). In linking this sense of belonging to learning, Letseka (2012, p 57) argues for integrating the Ubuntu philosophy into teaching and learning. He argues that "Ubuntu reveres human life, dignity, respect, caring and compassion". He also indicates that the focus

of Ubuntu on caring and sharing transcends ethnocentric notions of uniqueness. Therefore, the learning and teaching environment needs to be deeply inclusive of diversity (race, gender, neurology, etc.). Enhancing the use of Universal Design for Learning (UDL) by designing curricula and spaces for those students who occupy the margins can help improve accessibility, promote greater equity in learning outcomes, and promote a sense of belonging (Bartlett & Ehrlich, 2024; Williams, 2021). Additionally, promoting a pedagogy of care in online and hybrid environments needs to be developed to create a signature learning experience at the UFS (Pietersen, 2024). In an AI-disrupted world, care is prioritized through a Human-Centred AI (HCAI) approach to artificial intelligence development. An HCAI approach acknowledges human needs, values, and experiences. It also emphasizes that the integration of AI systems into human contexts should enhance human capabilities and ensures that ethical considerations are at the forefront (Xu et al., 2023).

3.3 Innovation for social justice and sustainability

"Teaching is the one profession that makes all other professions possible" - Unknown.

The poly-crises confronting the world need to be tackled in higher education institutions, specifically in our learning spaces (Habib, 2024). Mitigating these crises requires a deep commitment to finding innovative ways to enhance equity by addressing the digital divide in the South African context and developing curricula that help students acquire the attributes that make them more desirable employees. Leveraging technology can help to design and develop innovative blended learning environments and modes of delivery (Council on Higher Education, 2024b; Sengupta & Blessinger, 2022). Therefore, at the centre of all UFS teaching and learning innovation should be the promotion of social justice, the financial sustainability of the institution and environmental sustainable development for the country and planet.

3.4 Quality, which embraces accountability and impact

The introduction of the Quality Assurance Framework (QAF) by the Higher Education Quality Committee (HEQC) emphasizes the critical importance of building institutional quality assurance capacity (Council on Higher Education, 2022). Quality, performance (i.e., impact), and accountability are deeply intertwined in teaching and learning (Hazelkorn et al., 2018). Performance or impact measures of teaching and learning include the delivery of employable graduates, increased postgraduate enrolment, especially PHD enrolment, and attainment (World University Rankings 2024, 2023). Achieving excellence will require a commitment to continuous improvement in learning and teaching (especially scholarly teaching), as well as initiatives that enhance the Scholarship of Teaching and Learning (SoTL).

4. Strategic Priorities

4.1 Enhancing graduate attributes for impact

The world has started transitioning from the Fourth Industrial Revolution (4IR), which focused heavily on digitalization and automation, to the Fifth Industrial Revolution (5IR), which emphasizes the harmonious coexistence of humans and machines (Carayannis & Morawska-Jancelewicz, 2022). Therefore, future-ready graduates will need to be able to put human needs at the centre of technological advancement. They will also need to have a deep understanding of environmental sustainability and social responsibility (Carayannis & Morawska-Jancelewicz, 2022). Analytical skills (e.g., critical thinking and problem-solving) will need to be complemented by digital skills that will allow students to be digitally fluent in a technology-disrupted future. Graduates will need to acquire systems thinking skills by developing an understanding of communities and organisations. They will also need to communicate and collaborate in an emotionally intelligent manner (i.e., with empathy and adaptability) (World Economic Forum, 2023).

Therefore, the development and enhancement of the graduate attributes at the UFS need to strengthened through intentional action plans. The inclusion of digital skills and competencies as the ninth graduate attribute and the associated digital pathway has the potential to strategically position UFS graduates, if intentionally integrated into programmes and curricula. To develop environmental sustainability and planetary awareness, CTL is also developing a proposal in collaboration with the SARCHi Chair in Higher Education and Human Development, the Centre for Development Support (CDS), to reengineer the ethical reasoning graduate attribute to focus on environmental sustainability. The aim is to integrate cutting-edge content with innovative pedagogy to catalyse social innovation and entrepreneurship in all undergraduates. In addition, environmental sustainability will be integrated into other attributes, for example, community engagement and entrepreneurial mindset.

Proposed UFS graduate attributes

It is critically important to mention that the World Economic Forum identifies the following foundational skills that underpin graduate attributes: literacy, numeracy, scientific literacy, ICT literacy, financial literacy, and cultural and civic literacy (Soffel, 2016). Considering the increased number of enrolments of students from quintile 1-3 schools, the UFS needs to offer these skills through foundational courses (academic literacy, lifelong learning skills, and mathematical literacy), UFSS, and other faculty-specific courses. A task group will be

established to build on this foundational work, especially with a focus on conceptualising the ethical reasoning for sustainability attribute. The updated eight UFS graduate attributes are provided in Table 1.

Table 1: Graduate attributes defined

Attribute	Definition
Academic competence	Academic competence refers to the knowledge, skills and attitudes (including values) that students develop through their interaction with discipline-specific content. Critical to academic competence is lifelong learning, which is an all-purposeful learning activity, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence. Lifelong learners are curious, take initiative, learn independently, transfer knowledge, and reflect on their learning.
Critical thinking	Critical thinking is a habit of mind characterised by the comprehensive exploration of issues, ideas, artefacts, and events before accepting or formulating an opinion or conclusion.
Problem-solving	Problem solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal.
Oral communication	Oral communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviours.
Written communication	Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.
Community engagement	Community engagement is working to make a difference in the community life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes. In addition, community engagement encompasses actions wherein individuals participate in activities of personal and public concern that are both individually life-enriching and socially beneficial to the community. Finally, community engagement includes an understanding of the social and cultural diversity in our country, whereby students value and respect different cultures and are able to analyse and solve problems with people from different
Ethical Reasoning for Sustainability	Ethical reasoning is reasoning about right and wrong human conduct in relation to environmental sustainability. It requires students to be able to assess their own ethical values and the social context of problems, recognise ethical issues in a variety of settings, think about how different ethical perspectives might be applied to ethical dilemmas and consider the ramifications of alternative actions. Students' ethical self-identity evolves as they practice ethical decision-making skills and learn how to describe and analyse positions on ethical issues related to sustainability.
Entrepreneurial Mindset	Entrepreneurial mindset is the set of attitudes, skills and behaviours that students need to succeed academically, personally and professionally. These include initiative and self-direction (leadership), risk-taking, flexibility and adaptability, creativity and innovation, critical thinking and problem solving. Other definitions include the ability to see opportunities, marshal resources and create value. An entrepreneurial mindset applies to all spheres of life. It enables citizens to nurture their personal development, actively contribute to social development, enter the job market as employees or as self-employed, and start or scale up ventures which may have a cultural, social or commercial motive (Bacigalupo et al., 2016; *The Entrepreneurial Mindset | NFTE*, 2023) .

Attribute	Definition
Digital Skills and Competencies	Digital skills and competencies include the ability to engage with, use and create technologies to enable learning and working in a digital society. 25 Digital skills frameworks from across the world are integrated into four themes, namely ICT Proficiency, Digital Citizenship, Information, Data and Media Literacy, and Digital Creation.

4.1.1 Propositions for the operationalisation of this strategic priority

4.1.1.1 Intentional embedding of digital skills and competencies: Level 1 of the newly developed graduate attributes has already been integrated into the UFSS foundational module. The process of intentionally integrating levels 2 and 3 into programmes and curricula more broadly has started but has to be monitored and supported over the long term to ensure that UFS graduates leave with the skills necessary to thrive in a technology-disrupted future. A HCAI approach will be integrated into the graduate attributes to ensure that human capabilities and ethical considerations are at the forefront of learning and teaching at the UFS.

4.1.1.2 Reengineer the 6th graduate attribute into ethical reasoning for sustainability: This collaborative project will include the development of environmental sustainability content which include global and local perspectives. The content can be integrated into curricular and co-curricular interventions.

4.1.1.3 Integrate social innovation and entrepreneurship across the graduate attributes: The reengineering of the 6th graduate attribute will be supplemented by the integration of cutting-edge environmental sustainability content with innovative pedagogy to catalyse social innovation and entrepreneurship in all undergraduates. Entrepreneurship should be seen as including economic, social, and ecological entrepreneurship. These attributes will be integrated into the current community engagement and entrepreneurial mindset graduate attributes.

4.2 Improve student success through alignment, data, and technology

Ensuring access, articulation, and success is key to a well-functioning Post-School Education and Training system (Council on Higher Education, 2024a). The focus on improving student success has grown even sharper as public higher education, globally, is being confronted by various stakeholders about the efficiency of institutions and systems (Blake, 2024). Therefore,

Du Plessis (2024) has emphasized the need for South African higher education to improve its efficiency in terms of degree attainment and research production.

Through strategic prioritization, the efficient use of government grants, and international donor funding, the UFS has become a leader in student success. The aspirations of Vision 130 for a better undergraduate-postgraduate ratio and for the production of desirable and employable graduates require an intensified focus on student throughput and narrowing graduation and throughput achievement gaps.

Although donor funding has enabled the development of the GPS@UFS Hub and a scaled employability approach, two years of investment is too short to ensure financial sustainability. Therefore, a focus on mobilizing donor funding is needed. In addition, the decline in government grants will require the development of an innovative approach to cost-sharing to ensure the maintenance of the scaled, high-impact practices with proven evidence-based track records of improving students' success. In accordance with the principle of responsible stewardship, both optimization analyses and innovation in pedagogy have been initiated to minimize costs. Fortunately, the Siyaphumelela 3.0 grant will enable the UFS to collaborate with the National Institute for Student Success (NISS) based at Georgia State University. This collaboration will enable the UFS to develop a student success framework to create the optimal alignment of student success initiatives. The framework will align curricular and co-curricular support to, for example, address mental health and well-being in higher education (Aloka, 2024) .

4.2.1 Propositions for the operationalisation of this strategic priority

4.2.1.1 Develop a student success framework in collaboration with NISS: By collaborating with the NISS, the UFS will be able to reflect critically on data integration and the alignment of student success initiatives in the curricular and co-curricular spaces. This will inform the development of a student success framework that will clarify pathways to throughput using data analytics and optimizing the efficiency of the GPS@UFS Hub.

4.2.1.2 Develop innovative cost-sharing and optimization models: The decline in government grants has necessitated the development of a cost-sharing model with faculties to ensure that the proven impact of scaled, high-impact practices is maintained.

4.2.1.3 Obtain donor funding to ensure the financial sustainability of GPS@UFS and scaled employability: The robust evidence for the impact of the GPS@UFS Hub, as well as the scaled career development and employability pathway, needs to be leveraged. This will

be important in mobilising donor support to enable the initiatives to run for an additional 3-years ultimately assisting them to become sustainable.

4.2.1.4 Develop research and data-driven interventions to address achievement gaps: The collaboration between NISS and the team researching the reasons behind the gender performance gap in Siyaphumelela 3.0 will be used to more thoroughly understand achievement gaps in general and develop nuanced, individualized interventions using nudging, digital support, and co-curricular support.

4.2.1.5 Enhance the efficiency and impact of High Impact Practices (HIPs): In order to complement and expand the reach and impact of HIPS, current optimization analyses, innovative curriculum development, and an investigation of how students and academic use digital platforms (including the use of AI) must be explored.

4.3 Expand curriculum renewal to ensure significant learning

Transforming the curriculum continues to be one of the critical challenges facing South African higher education (Lange, 2017; Tabane et al., 2023). Curriculum can be viewed as consisting of different parts: the explicit curriculum, for example, reading, assessments, practicals, etc.; the hidden curriculum, which is the university's dominant culture and values; and the null curriculum, which is what a university chooses to leave out of the curriculum (Le Grange, 2016).

With this in mind, decolonization should dismantle epistemic violence and promote inclusivity and epistemic agency by integrating Indigenous Knowledge Systems (IKS) into curricula to create a more equitable educational landscape (Simmonds, 2024). Muraina et al. (2024) calls for a specific focus on historical and structural barriers faced by African students in higher education. Additionally, Sibanda and Maseko (2024) argue that decolonising disciplines (the field of academic literacies for the authors) should be a collaborative effort based on "humanness" embodied in the concept of "Ubuntu". This collaborative effort is necessary for exploring a range of pedagogies (positionality, transitionality, and relationality) to build a university and society which actively builds and strives for epistemic success. They indicated that a lot still needs to be done to develop non-violent epistemic pedagogies that bridge the epistemic border in the classroom and society (2024, p.23).

Another initiative aimed at broadening curriculum renewal is the Curriculum Renewal Programme (CRP), which was developed in collaboration with the University of Virginia's

Center for Teaching Excellence. The CRP has supported over 300 academics to design contextually responsive curricula and enabled them to reflect on blended learning, the use of technology, decolonization, and the graduate attributes. The CRP is reviewed annually and needs to intentionally integrate and include environmental sustainability (Piazza et al., 2024). The dearth of programme design expertise within the UFS requires a collaborative approach to develop capacity in this critical area.

To support the development of a vibrant and epistemically diverse learning and teaching environment, the CRP should emphasise the importance of Universal Design for Learning (UDL) to create a feeling of belonging and inclusion (Fleming, 2023). The CRP should include a more nuanced equitable approach to teaching and the integration of environmental sustainability and Work Integrated Learning (WIL). WIL will significantly enhance graduates' employability by bridging the gap between academic knowledge and practical skills (Grantham & Lachizzi, 2024). To enhance environmental sustainability, social innovation, and social entrepreneurship, the content development for the ethical reasoning for sustainability attribute should be integrated into the CRP. The importance of creating a collaborative network between faculties, their advisory boards, career services, and CTL is also vital to creating a scaled approach to employability. The innovations will help to develop a significant learning experience at the UFS (Fink, 2013).

4.3.1 Propositions for the operationalisation of this strategic priority

4.3.1.1 Enhance the CRP: The development of a CRP short-learning programme and increasing the popularity of the programme, requires careful consideration and the optimal design of the programme. Innovative blended learning design should be explored to consider scaled delivery with impact.

4.3.1.2 Co-creation and implementation of a Programme Renewal Programme (PRP): By collaborating closely with DIRAP, a programme should be designed and implemented to address the dearth of programme design capacity at the UFS. This will help to promote and support continuous quality enhancement.

4.3.1.3 Scaling WIL: To scale WIL, its scope in the institution needs to be mapped. Concurrently, WIL training needs to be integrated into academic staff development and aligned with the graduate attributes project to minimize duplication.

4.3.1.4 Development of an employability culture: To develop an employability culture, the CTL will coordinate the development of an employability framework. The alignment of communication and enhanced collaboration is critical to scale participation in the career development and employability pathway.

4.4 Design learning for sustainability, flexibility and inclusion

The COVID-19 pandemic and developments in AI necessitate the development of new models of provision that are critical to the sustainable future of higher education (Andrade, 2023). The UFS Blended Learning and Teaching Policy (2022) provides a policy framework within which a new signature learning and teaching experience will create significant learning as well as the creation of a lifelong learning relationship between students and the institution. To create this experience, the UFS will need to create a continuum of the learning and teaching offerings from undergraduate to postgraduate to short learning programmes (i.e.,micro-credentials).

The Council on Higher Education (2024) indicates that new modes of provision should address the dimensions of time-pace-space, preparedness, responsiveness, integrity, and institutional support (Council on Higher Education, 2024b). A critical pillar of the design and implementation of a new signature learning and teaching experience is the development of digital skills for staff and students (Council on Higher Education, 2024c; World Economic Forum, 2023).

As technology has become a significant cost-driver in global higher education, universities need to reflect carefully on the relationships between pedagogy and technology (Fawns, 2022). Amiel (2024), for example, warns that an institution's choice of technology platforms should be carefully considered. The proposed platforms for the UFS signature learning experience should, for example, include a learning management system, a dedicated assessment platform, a lecture capture system, engagement and active learning platforms, relevant assistive technologies, and anti-plagiarism software. By focusing curriculum and programme design and academic staff development around these platforms the UFS can start driving down technology costs.

The disruptive impact of AI also requires that the UFS develops a policy position on the use of AI, as well as guides and appropriate training for staff. The development of these materials should be co-created by faculties, CTL, the library and the Inter-disciplinary Centre for Digital Futures (ICDF).

4.4.1 Propositions for the operationalisation of this strategic priority

4.4.1.1 Design and implement a signature mode of delivery: This will require the mapping of current learning and teaching software and platforms. It also calls for identifying the core platforms that can become the focus of academic staff development and the development of signature learning and teaching experiences that will catalyse a lifelong learning relationship between students and the UFS.

4.4.1.2 Enhance the digital skills of students and staff: The current Digital Skills and Competency Pathway needs to be updated to include policies or guides around students' responsible use of AI. There also needs to be complementary alignment between staff development initiatives by HR and CTL to minimize duplication.

4.4.1.3 Update and expand the use of the staff blended learning platform: The current Best of Both (BoB) blended learning staff support platform needs to be aligned with the CHE's Higher Education Practice Standard for Modes of Learning and Teaching Provision. Additionally, staff engagement with BoB staff needs to be increased.

4.4.1.4 Develop an institutional position on AI use with guidelines and resources: Building on the work done by various stakeholders on AI, the UFS needs to develop a position statement with guidelines and appropriate support resources for staff and students.

4.5 Empower academics with evidence-based pedagogy and technology

Academics are expected to balance their roles as disciplinary experts, researchers, and university teachers. These roles are equally important and should all be developed, incentivised, and rewarded (Department of Higher Education and Training, 2017; Nedermeijer, 2023). Evidence-based pedagogy is positioned at the nexus between research and learning and teaching and therefore emphasizes the integration of scholarly practices with teaching and learning research (Corradini, 2022; Diery et al., 2020).

In line with the strategic objectives of the university, interdisciplinary research on learning and teaching, such as How Learning Works: Eight Research-Based Principles for Smart Teaching

(Lovett, 2023), will be integrated into academic staff development interventions and SoTL projects. These interventions need to be complemented by an Academic Leadership Development programme that empowers Deans, Heads of Departments, and Programme Directors to meet the challenges they will face in the complex higher education environment, especially regarding learning and teaching (Maduforo et al., 2024; Mishra et al., 2024).

Academic staff development initiatives need to be supported by recruitment practices, workload models, and performance management processes, which value learning and teaching. In light of the challenges facing higher education, these aspects of academic staff development need to be required to ensure academics are empowered for the challenges they will face (Chitanand & Rathilal, 2023; Watson & Clouser, 2023).

4.5.1 Propositions for the operationalisation of this strategic priority

4.5.1.1 Expand and integrate leading evidence-based practices: To support the UFS's research-led goals, it is essential that all academic staff development initiatives be continuously infused with evidence and research on innovative approaches to learning and teaching.

4.5.1.2 Creating an environment which values learning and teaching: For empowerment initiatives to be successful, it is vital that they are supported by recruitment, workload models, and performance management processes that value and support the learning and teaching role of academics.

4.5.1.3 Require attendance at academic staff development initiatives: To ensure evidence-based practices are integrated into all learning spaces and are in line with international and national expectations, academic staff should be required to attend appropriate academic staff development initiatives. These initiatives need to be offered in a flexible manner to accommodate the pressures faced by academics.

4.6 Enhance quality through scholarship for impact

Quality is one of the central drivers ensuring universities' survival in the 21st century (Hazelkorn et al., 2018). The implementation of the QAF will require that institutional quality assurance capacity is intentionally enhanced (Council on Higher Education, 2022). A focus on

evidence helps institutions to understand how students think, behave, and learn, as well as what they are able to do upon completion of their higher education qualifications (Bosch & Spinath, 2023; Meleg & Vas, 2020).

Student engagement data and research are more important than ever in a post-pandemic world where student class attendance and engagement are of great concern (Keengwe, 2023; Mamani-Benito et al., 2024). Student engagement research is vital for retention and progression to degree completion in minimum time (Coates et al., 2022; Kahu, 2023; Trolian, 2024). Therefore, the UFS needs to continue with its robust research that is nationally and internationally recognised.

A focus on SoTL can contribute to the research-led vision of the UFS. McEwan (2022) indicates that SoTL needs to be intentionally nurtured and developed at research-intensive institutions. Not only does it directly contribute to the impact of teaching in the classroom but it also enhances the success of students (Vorster, 2020). Action research provides a methodological fit with the academy while also enhancing leadership capacity (Harvey & Jones, 2021).

Data-driven decision-making (DDDM) is also crucial for enhancing the quality of higher education (Asfaw et al., 2023). The collaboratively authored Annual Learning and Teaching Report provides critical insights for institutional planning. The impact of the teaching and learning awards can be enhanced by integrating a post-award reflection tool (Swiatek et al., 2024). These awards have to be linked to promotion criteria to have optimal impact (Seppala & Smith, 2020).

Webber and Zheng (2024) indicate that advanced data analytics complemented by AI could help enhance student engagement and academic performance. Therefore, the GPS@UFS initiative needs to be integrated into evidence-based leadership at the UFS.

4.6.1 Propositions for the operationalisation of this strategic priority

4.6.1.1 Enhance research and impact focus: Considering the concerns regarding class attendance and student engagement, research using the South African Surveys of Student Engagement needs to be expanded to enhance the visibility of the UFS in this field. The impact analyses of high-impact practices need to be shared, and the links to both these areas of research and quality learning and teaching need to be explored

4.6.1.2 Increase support for the Scholarship of Teaching and Learning: To support the vision of the research-led institution, a study must be done on the number of publications related to teaching and learning in the last 5 years. The analysis needs to inform research targets to increase the UFS's visibility in this field of research. Interdisciplinary collaboration in SoTL projects needs to be intentionally developed.

4.6.1.3 Enhance the impact of the award-quality assurance feedback loop: Institutional and faculty teaching and learning awards need to be aligned to recognize staff. The alignment encourages reflection but also promotes participation in national and international conferences and awards. The institutional audit highlighted the need for better monitoring of the implementation of improvement plans resulting from various reviews. The Academic Committee can be used to monitor the implementation to enhance quality assurance at the UFS.

4.6.1.4 Integrate advanced analytics with business intelligence: The GPS@UFS project has laid the foundation for the use of advanced analytics and AI to help enhance students' minimum time to degree, creating an opportunity for better postgraduate enrolment. The sustainability of this initiative needs to be supported by advancement efforts.

5. Resourcing

Resources for the implementation of this strategy include the following:

Cost-sharing models: The uncertainty around government funding requires the development of institutional and faculty cost-sharing models to ensure that quality learning and teaching and student success efforts can continue.

Government subsidy: Both the input and output subsidy are directly related to learning and teaching. Budgeting should ensure that efforts to improve learning and teaching are appropriately resourced.

The Foundation and University Capacity Development Grant (UCDG): In light of the funding uncertainty around these grants, it is important that sustainability strategies are developed to ensure that the research-led and postgraduate aspirations of the UFS are met.

Donor funding: The Kresge Foundation continues to be a funder of student success at the UFS. In light of the changes in the focus of the Michael and Susan Dell Foundation, proposals that focus on public-private partnerships need to be explored.

6. Related policies and documents

6.1 Institutional policies and documents

- Blended learning and teaching policy
- Vision 130
- UFS strategic plan 2023-2028
- Policy on Short Learning Programme Provisioning at the UFS
- Policy on Preventing and Dealing with Plagiarism
- Alignment of the Recognition of Prior Learning (RPL) Policy and short learning Programmes guideline document
- UFS Policy on Collaborative Degrees with Foreign Universities (2022 and future amendments)
- UFS Internationalisation Strategy (2023-2028, and amendments)

6.2 National policies and documents

- National Plan for Post-School Education and Training 2021–2030 (DHET, 2023).
- A national framework for enhancing academics and university teachers. Pretoria, South Africa: Department of Higher Education and Training (DHET, 2018).
- White paper for post-school education and training (DHET, 2013).
- Higher Education Act 101 of 1997
- Distance Higher Education Programmes in a Digital Era: Good Practice Guide (CHE, 2014).
- Strategic Policy Framework on Disability for the Post-School Education and Training System (2018)
- White Paper on the Rights of Persons with Disabilities (2016)
- UFS Policy on Universal Access and Disability Support for students with disabilities
- Policy Framework for Internationalisation of Higher Education in South Africa (2020)

7. Summary of goals and key performance indicators: 2025 – 2030

	Goal/ KPA	KPI	As Is 2025	Target 2027	Target 2030
1. Enhance graduate attributes for impact	Enhance graduate attributes in curricular and co-curricular interventions to: 1. Prepare students for a flexible technology enabled future 2. Develop a planetary consciousness and social entrepreneurship in all	Embed digital skills and competencies and optimize pathway participation	50%	80%	100%
	Optimize student success through optimization	Reengineer the 6th graduate attributes to become Ethical Reasoning for Sustainability, and develop accompanying content that can be integrated into curricular and co-curricular interventions	0%	50%	100%
	Ensure sustainability of student success	Integrate social innovation and entrepreneurship across graduate attributes	0%	50%	100%
2. Improve student success through data and technology	Increase student success and throughput rates and reduce the achievement race and gender gaps	UG Success Rate	83%	85%	87%
		UG throughput rate	50%[1]	53%[2]	55%[3]
		B/W student achievement	10%	9%	8%

[1] Based on latest UFS data for the 2018 cohort (which includes 4-year degree programme students graduating in n+2 in 2023.
[2] For the 2020 cohort
[3] For the 2022 cohort

	Goal/ KPA	KPI	As Is 2025	Target 2027	Target 2030
	Enhance efficacy and impact of High Impact practices (HIPs)	UFS101 success rate	75%	80%	85%
		Nr of UG modules using tutorials	180	185	190
		% of UG students using tutorials	41%	50%	60%
		% of UG students using advising	90%	95%	100%
		Academic literacy modules success rate	82%	85%	85%
		% of UG and PG<M using write site	25%	30%	35%
3. Expand curriculum renewal to ensure significant learning	Accelerate curriculum renewal	Increase the number of participants in the Curriculum Renewal Programme (CRP) per year	200	350	700
	Develop programme design capacity	Co-create and implement Programme Renewal Programme (PRP) to promote and support continuous quality enhancement	0%	50%	100%
	Scale work-integrated learning	Integrate work-integrated learning in all UFS undergraduate programmes	TBD	50%	100%
	Develop an employability culture	Develop an employability framework and implementation plan in collaboration with Career Services	100%		
		Align communication and collaboration to scale participation in the career development and employability pathway	20%	50%	100%
4. Design learning for sustainability, flexibility, and inclusion	Enable signature mode of delivery	Review, design and implement an integrated technology platform to enable the signature mode of delivery	0%	50%	100%
	Support the digital fluency of staff and students	Scale student participation in Digital Skills and Competency Pathway	24%	50%	100%
		Integrate digital skills development in all academic staff development initiatives	30%	50%	100%
	Provide continuous development and support for staff to teach in a technology-enabled/blended learning environment	Increase Digital staff development platform usage by staff	25%	50%	80%
	Develop institutional position on AI	Develop AI position with guidelines and resources	100%		

	Goal/ KPA	KPI	As Is 2025	Target 2027	Target 2030
5. Empower academics with evidence-based pedagogy and technology	Recruitment of quality academic staff	% of interview processes that include a learning and teaching presentation	N/A	10%	50%
	Evidence-based empowerment of staff	% of academic staff with learning and teaching portfolios	60%	80%	95%
	Support continuous Academic Leadership development	Percentage of Dean's, HODs, and Programme Directors and Coordinators who attend training	50%	75%	95%
	Teaching valued as one of the roles of an academic staff member	Workload model/ academic performance criteria reflecting international best practice in learning and teaching	Unknown	100%	100%
	Academic staff are adequately equipped for their teaching roles	• New academic staff orientation compulsory for all new staff • All academic attend at least one high impact staff development workshop per year	25%	50%	95%
6. Enhance quality through scholarship for impact	Data driven student voice	SASSE/ BUSSE/ CLASSE	Yes	Yes	Yes
	Support the scholarship of teaching and learning	HIP evaluations & impact analyses	Yes	Yes	Yes
		Nr of publications on teaching and learning	TBD	Base + 5%	Base + 7%
	Recognise and reward quality learning and teaching	Faculty and institutional learning and teaching awards	TBD		
		Number of award winners (National and International)	TBD		
	Institutional learning and teaching decisions are data-driven and quality focused	Annual L&T report	Yes	Yes	Yes
		GPS@UFS tracking system and integration	0%	50%	75%
		Number of Quality assurance improvement plans completed	80%	90%	100%

8. References

Aloka, P. (Ed.). (2024). *Mental health crisis in higher education*. IGI Global. https://doi.org/10.4018/979-8-3693-2833-0

Altbach, P., & Salmi, J. (2011). *The Road to Academic Excellence: The Making of World-Class Research Universities*. The World Bank.

Amiel, T. (2024). Open education and platformization: Critical perspectives for a new social contract in education. *PROSPECTS*, *54*(2), 341–350. https://doi.org/10.1007/s11125-023-09660-x

Andrade, M. S. (2023). Pedagogies and Practices: An Institutional Framework for Flexible Learning. *Journal of Higher Education Theory and Practice*, *23*(5). https://doi.org/10.33423/jhetp.v23i5.5928

Asfaw, Z., Alemneh, D., & Jimma, W. (2023). Data-Driven Decision-Making and Its Impacts on Education Quality in Developing Countries: A Systematic Review. *2023 International Conference on Information and Communication Technology for Development for Africa (ICT4DA)*, 198–203. https://doi.org/10.1109/ICT4DA59526.2023.10302228

Bartlett, M. E., & Ehrlich, S. (Eds.). (2024). *Unlocking learning potential with universal design in online learning environments*. Information Science Reference.

Blake, J. (2024). *How U.S. Plans to Recognize Colleges for Student Success*. Inside Higher Ed. https://www.insidehighered.com/news/government/2024/10/18/new-federal-student-success-recognition-program-rolls-out

Borrero, J. D., & Yousafzai, S. (2024). Circular entrepreneurial ecosystems: A Quintuple Helix Model approach. *Management Decision*, *62*(13), 141–177. https://doi.org/10.1108/MD-08-2023-1361

Bosch, E., & Spinath, B. (2023). What evidence-based learning activities help students acquire knowledge, correct confidence in their own knowledge, and accurate self-assessment? *Learning and Individual Differences*, *108*, 102374. https://doi.org/10.1016/j.lindif.2023.102374

Carayannis, E. G., & Morawska-Jancelewicz, J. (2022). The Futures of Europe: Society 5.0 and Industry 5.0 as Driving Forces of Future Universities. *Journal of the Knowledge Economy*, *13*(4), 3445–3471. https://doi.org/10.1007/s13132-021-00854-2

Chitanand, N., & Rathilal, S. (2023). *Academic Staff Development: Disruptions, Complexities, and Change (Envisioning New Futures)*. African Sun Media.

Coates, H., Gao, X., Guo, F., & Shi, J. (Eds.). (2022). *Global student engagement: Policy insights and international research perspectives*. Routledge. https://doi.org/10.4324/9781003254096

Corradini, E. (2022). Developing pedagogical content knowledge through the integration of education research and practice in higher education. In *Developing Expertise for Teaching in Higher Education*. Routledge.

Council on Higher Education. (2022). *A Quality Assurance Framework (QAF) For Higher Education in South Africa*. https://www.che.ac.za/publications/frameworks/quality-assurance-framework-qaf-higher-education-south-africa

Council on Higher Education. (2024a). *Good Practice Guide on Articulation into and within Higher Education | Council on Higher Education*. https://www.che.ac.za/publications/reports/good-practice-guide-articulation-and-within-higher-education

Council on Higher Education. (2024b). *Higher Education Practice Standard for Modes of Learning and Teaching Provision (Consultative draft)*. Council on Higher Education (CHE). chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.che.ac.za/sites/default/files/inline-files/Modes%20of%20Learning%20and%20Teaching%20Provision_3%20June%202024.pdf

Council on Higher Education. (2024c). *Reflecting on the student success during COVID-19: Lessons to take forward*. Council for Higher Education.

Department of Higher Education and Training (DHET). (2017). *Discussion Document on the Implementation of the University Capacity Development Programme through effective Management and Utilisation of the University capacity Development Grant 2018 – 2020*. Department of Higher Education and Training (DHET).

Department of Higher Education and Training (DHET). (2024). *Ministerial keynote*. 3rd Universities South Africa (USAf) Higher Education Conference: The future fo the university, Council for Scientific and Industrial Research, Pretoria. https://usaf.ac.za/the-3rd-usaf-higher-education-conference/

Universities South Africa (USAf) Higher Education Conference: The future fo the university, Council for Scientific and Industrial Research, Pretoria. https://usaf.ac.za/the-3rd-usaf-higher-education-conference/

Diery, A., Vogel, F., Knogler, M., & Seidel, T. (2020). Evidence-Based Practice in Higher Education: Teacher Educators' Attitudes, Challenges, and Uses. *Frontiers in Education*, *5*. https://doi.org/10.3389/feduc.2020.00062

Du Plessis, S. (2024). *Sustainability of higher education institutions in South Africa*. 3rd Universities South Africa (USAf) Higher Education Conference: The future fo the university, Council for Scientific and Industrial Research, Pretoria. https://usaf.ac.za/the-3rd-usaf-higher-education-conference/

Dumoulin, M., & Malkov, D. (2024). *Towards the 4th generation university: A collaboration between Elsevier and TU Eindhoven*. Www.Elsevier.Com. https://www.elsevier.com/connect/towards-the-fourth-generation-university

Edwin, N. (2024). *'We must learn to swim together, or we will collectively sink.'* University World News. https://www.universityworldnews.com/post.php?story=20241014122821886

Fawns, T. (2022). An Entangled Pedagogy: Looking Beyond the Pedagogy—Technology Dichotomy. *Postdigital Science and Education*, *4*(3), 711–728. https://doi.org/10.1007/s42438-022-00302-7

Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses* (Revised and updated edition). Jossey-Bass.

Fleming, E. C. (2023). UDL for Inclusive Teaching: Offering Choice to Increase Belonging Through Technology. *Journal of Teaching and Learning with Technology*, *12*(1), Article 1. https://doi.org/10.14434/jotlt.v12i1.36327

Grantham, S., & Lachizzi, M. (2024). From classroom to career: A new approach to work-integrated learning in communication studies. *Higher Education, Skills and Work-Based Learning*, *14*(4), 821–834. https://doi.org/10.1108/HESWBL-02-2024-0051

Habib, A. (2024). *Three Decades of Democracy: Reflecting on Higher Education Achievements & Challenges*. 3rd Universities South Africa (USAf) Higher Education Conference: The future fo the university, Council for Scientific and Industrial Research, Pretoria. https://usaf.ac.za/the-3rd-usaf-higher-education-conference/

Harvey, M., & Jones, S. (2021). Enabling leadership capacity for higher education scholarship in learning and teaching (SOTL) through action research. *Educational Action Research*, *29*(2), 173–190. https://doi.org/10.1080/09650792.2020.1803941

Hazelkorn, E., Coates, H., & McCormick, A. C. (2018). *Research handbook on quality, performance and accountability in higher education*. http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1855634

Hordosy, R., & McLean, M. (2022). The future of the research and teaching nexus in a post-pandemic world. *Educational Review*, *74*(3), 378–401. https://doi.org/10.1080/00131911.2021.2014786

Hunt, L., & Chalmers, D. (Eds.). (2021). *University teaching in focus: A learning-centred approach 2nd ed.* ACER Press.

Kahu, E. R. (2023). *Chapter 5: Fostering student engagement: the importance of relationships and belonging face-to-face and online*. https://www.elgaronline.com/edcollchap/book/9781802204193/book-part-9781802204193-12.xml

Keengwe, J. (Ed.). (2023). *Innovative digital practices and globalization in higher education*. IGI Global. https://doi.org/10.4018/978-1-6684-6339-0

Kigotho, W. (2024). *Sustainability – How are African universities faring?* University World News. https://www.universityworldnews.com/post.php?story=20240926104941635

Lange, L. (2017). 20 Years of higher education curriculum policy in South Africa. *Journal of Education (University of KwaZulu-Natal)*, *68*, Article 68.

Lederman, D. (2024). *New College Classification Will Measure Socioeconomic Mobility*. Inside Higher Ed. https://www.insidehighered.com/news/students/careers/2024/05/16/socioeconomic-mobility-criterion-sorting-colleges

Lovett, M. C. (with Bridges, M. W., DiPietro, M., Ambrose, S. A., & Norman, M. K.). (2023). *How Learning Works: Eight Research-Based Principles for Smart Teaching* (2nd ed). John Wiley & Sons, Incorporated.

Maduforo, A. N., Scott, S., & Scott, D. (2024). Leadership Development for Contemporary Post-Secondary Academic Leaders: Challenges, Content and Approach. *Sage Open*, *14*(2), 21582440241253647. https://doi.org/10.1177/21582440241253647

Mamani-Benito, O., Esteban, R. F. C., Huayta-Meza, M. V., Castillo-Blanco, R., Chaparro, J. E. T., & Morales Garcia, W. C. (2024). Emotional fatigue, academic engagement, and satisfaction with studies during the return to post-pandemic university attendance. *Frontiers in Education*, *9*, 1297302. https://doi.org/10.3389/feduc.2024.1297302

McEwan, M. (2022). The Journey to SoTL: Institutionally Supporting a Transition to Scholars of Teaching and Learning. *International Journal for the Scholarship of Teaching and Learning*, *16*(2). https://doi.org/10.20429/ijsotl.2022.160205

Meleg, Á., & Vas, R. (2020). Towards Evidence-Based, Data-Driven Thinking in Higher Education. In A. Kő, E. Francesconi, G. Kotsis, A. M. Tjoa, & I. Khalil (Eds.), *Electronic Government and the Information Systems Perspective* (Vol. 12394, pp. 135–144). Springer International Publishing. https://doi.org/10.1007/978-3-030-58957-8_10

Mintz, S. (2024). *The Learning-Centered University*. Johns Hopkins University Press. https://doi.org/10.56021/9781421448022

Mishra, L., Gupta, T., & Shree, A. (2024). Effective Academic Leadership Development in Higher Education Institutions. In *Academic Leadership in Higher Education in India*. Routledge India.

Muraina, L., Toshe-Mlambo, Y., & Cingo, S. (2024). South African Higher Education:

Transformation or/and Decolonisation? *Scholarship of Teaching and Learning in the South*, *8*(1), 183–205. https://doi.org/10.36615/sotls.v8i1.321

Nedermeijer, J. (2023). *Evidence-Based Blended and Online Learning: Course Design for University Teachers* (1st ed). BRILL.
O'Dea, X. (2024). Generative AI: Is it a paradigm shift for higher education? *Studies in Higher Education*, *49*(5), 811–816. https://doi.org/10.1080/03075079.2024.2332944

Piazza, R., Castiglione, G., & Guevara, J. R. (2024). Universities in global transformation: Re-thinking curriculum integration and collaboration to co-create our future. *Journal of Adult and Continuing Education*, 14779714241263779. https://doi.org/10.1177/14779714241263779

Pietersen, D. (2024). Pedagogy of care in online teaching and learning environments at tertiary institutions through the eyes of Freire. *Perspectives in Education*, *42*(2), 4–14. https://doi.org/10.38140/pie.v42i2.6580

Rensburg, I. (2024). *Higher Education Leadership and Management*. 3rd Universities South Africa (USAf) Higher Education Conference: The future fo the university, Council for Scientific and Industrial Research, Pretoria. https://usaf.ac.za/the-3rd-usaf-higher-education-conference/

Sengupta, E., & Blessinger, P. (2022). Introduction to Innovative Approaches in Pedagogy for Higher Education Classrooms. In E. Sengupta & P. Blessinger (Eds.), *Innovative Approaches in Pedagogy for Higher Education Classrooms* (Vol. 42, pp. 3–9). Emerald Publishing Limited. https://doi.org/10.1108/S2055-364120220000042001

Seppala, N., & Smith, C. (2020). Teaching awards in higher education: A qualitative study of motivation and outcomes. *Studies in Higher Education*, *45*(7), 1398–1412. https://doi.org/10.1080/03075079.2019.1593349

Sibanda, B, Maseko, T. (2024). From access to success: Decolonising the teaching of academic literacy. In E. T. Woldegiorgis, L. Govender, & D. Z. Atibuni (Eds.), *Higher Education Transformation in Africa: A Quest for Epistemological Rupture* (1st ed.). Routledge. https://doi.org/10.4324/9781003528319

Simmonds, S. (2024). Challenging dominant education paradigms: Posthuman feminist inspirations towards alternate pathways for decolonising the curriculum. *Curriculum Perspectives*. https://doi.org/10.1007/s41297-024-00264-9

Swiatek, L., Ducasse, A. M., Coburn, J., Northcote, M., & Samarawickrema, N. (2024). Extending higher education recognition programs through a dedicated post-award reflective practice tool. *Reflective Practice*, *25*(4), 529–549. https://doi.org/10.1080/14623943.2024.2369355

Tabane, E. M. C., Diale, B., Mawela, A. S., & Zengele, V. T. (Eds.). (2023). *Fostering diversity and inclusion through curriculum transformation*. IGI Global. https://doi.org/10.4018/978-1-6684-6995-8

Trolian, T. L. (2024). Student Engagement in Higher Education: Conceptualizations, Measurement, and Research. In L. W. Perna (Ed.), *Higher Education: Handbook of Theory and Research: Volume 39* (pp. 265–324). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-38077-8_6

UNESCO. (2024). *Education for sustainable development: What you need to know | UNESCO*. https://www.unesco.org/en/sustainable-development/education/need-know

Vorster, J.-A. (2020). SoTL: A mechanism for understanding and finding solutions to teaching and learning challenges. *Scholarship of Teaching and Learning in the South*, *4*(2), 6–21. https://doi.org/10.36615/sotls.v4i2.149

Watson, J., & Clouser, S. A. (2023). Educational Development. In *Educational Principles and Practice in Veterinary Medicine* (pp. 383–397). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781119852865.ch15

Webber, K. L., & Zheng, H. Y. (2024). Artificial intelligence and advanced data analytics: Implications for higher education. *New Directions for Higher Education*, *2024*(207), 5–13. https://doi.org/10.1002/he.20508

Williams, J. R. (2021). Designing for the Margins:Addressing Inequities in Digital Learning Starts With Hearing and Engaging the Student Voice. *Change: The Magazine of Higher Learning*, *53*(1), 26–29. https://doi.org/10.1080/00091383.2021.1850118

World Economic Forum (WEF). (2023). *The Future of Jobs Report 2023*. https://www.weforum.org/publications/the-future-of-jobs-report-2023/

World University Rankings 2024: Methodology. (2023, September 20). Times Higher Education (THE). https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2024-methodology

Xu, W., Dainoff, M. J., Ge, L., & Gao, Z. (2023). Transitioning to Human Interaction with AI Systems: New Challenges and Opportunities for HCI Professionals to Enable Human-Centered AI. *International Journal of Human–Computer Interaction*, *39*(3), 494–518. https://doi.org/10.1080/10447318.2022.2041900

Zou, M., & Chen, X. (2024). Construction and Practice of Research-Based Teaching Mode Based on the Cultivation of Applied Talents. *Adult and Higher Education*, *6*(5). https://doi.org/10.23977/aduhe.2024.060503

Appendix 1

Table 2: Comparison of teacher-, student-, and learning-centred teaching

	Teacher-centred	Student-centred	Learning-centred
Learning approach	Teacher centred	Student centred aimed at individual study and collaboration through ICT	Graduate attributes (learning outcomes) and assessment determine flexible learning experiences needed
Teaching assumption	Any expert can teach	Teaching is complex and requires considerable training	Teaching is complex and requires considerable training as well as enabling environments
Lecturer purpose	The lecturer lectures her/his subject and is focused on classifying and sorting students	The lecturer coaches and facilitates (guide on the side) focused on developing students' competencies and talents	The lecturer designs material and experiences that actively engage students in learning and facilitate knowledge, skills and attitude development
Student	Passive vessel to be filled by lecturer's knowledge	Active constructor, discoverer, transformer of knowledge	The learner is a motivated and independent individual
Responsibility for learning	Student expects the lecturer to know and control	Student has responsibility for self-direction and relies on the lecturer when necessary	Alternation between lecturer-control and self-responsibility
Learning design	Focused on Identification, definition and memorisation (lower-order skills)	Focused on metacognitive skills like information search, communication, collaboration (higher-order skills)	Universal design focusing on understanding students, as well as facilitating learning and knowledge transfer focused on identification, definition and memorisation, and metacognitive skills (lower and higher order skills)
Assessment	Norm-referenced (grading on the curve); typically use multiple-choice items; student rating of instruction at end of course	Criterion-referenced (grading to predefined standards); typically use performances and portfolios; continual assessment of instruction	Blend of formative and summative assessment or continuous assessment focused on attaining defined learning outcomes.
Technology use	Drill and practice; textbook substitute; chalk-and-talk substitute	Problem solving, communication, collaboration, information access, expression	Technology enables flexible learning environment enabling various types of learning in various contexts
Knowledge	Transferred from lecturers to students	Jointly constructed by students and lecturers	Blend of transfer and construction between students and lecturers
Power	The lecturer determines the learning goals and criteria	Students determine their own learning goals	Learning goals are determined together based upon practical and societal experiences
Climate	Conformity, cultural uniformity	Diversity and personal esteem; cultural diversity and commonality	Diversity (cultural, etc.); inclusivity; personal esteem; and commonality
Adapted from Kirschner 2018 and Campbell and Smith, 1997 in Fink, 2013, p.22			