Do universities have the articulation of college programmes in mind when reviewing their academic curricula?

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ABSTRACT

In order to articulate academic programmes from college to university effectively, the curricula of the two institutional structures must be aligned. Studies show that this is not always the case, despite the existence of national and sectoral policies that are intended to promote alignment. In grappling with this reality, this study explored the level of interface of academic programmes between TVET (technical and vocational education and training) colleges and a comprehensive university in South Africa. It also investigated whether, and the extent to which, university policies and actors considered college programmes during their curriculum-review processes. Document analysis and semi-structured interviews were used to gather qualitative data. It was found that, instead of considering college curricula, curriculum review was driven by professional bodies, market demands and relevance. Moreover, institutional actors did not have the required agency to engage with the current misalignment of college–university academic programmes or curricula. The implication is that, while necessary, university policies for promoting academic curricula for articulation and programme interface are not adequate for resolving the problem of the misalignment between college and university curricula. To facilitate the interests of agents in articulation, the articulation officers at institutions of higher learning must ensure that articulation policies are in place in departments and that curriculum designers and related stakeholders are imbued with articulation principles during the review and realignment of curricula.

KEYWORDS

Introduction

Articulation is a concept that is in the early stages of development in South Africa (Branson et al., 2015), a country emerging from a past of apartheid injustices (Bolton & Samuels, 2016). Before 1994, the higher education curriculum, including ways in which knowledge was produced and disseminated, reflected the political and economic goals of colonial South Africa. Higher education institutions were compartmentalised: some for blacks and others for whites. This led to the 'proliferation and differentiation of the institutional types' and created a 'rigid binary divide' (Ng'ethe, Subotzky & Afeti, 2008:116).

In the case of technical colleges, the curricula were designed to suit market needs (Terblanche & Bitzer, 2018; Madileng, 2022). Their curricula articulated with those of either universities or, more likely, technikons (or universities of technology) owing to the nature of the latter (Lortan, 2019). Colleges and technikons provided technical education and training and traditional universities offered theoretical knowledge and pursued research. This structural reality insulated college qualifications from those of universities, and even universities were insulated from one another based on race or ethnicity and the colonial function of qualifications. Inevitably, this undermined articulation between programmes. This is why the different approaches and sites in which learning occurred were not perceived as being equal and were segmented without articulation being borne in mind (Bolton, Matsau & Blom, 2020).

In order to overcome the pre-1994 higher education structure and culture, a legislative and policy environment was brought into being from 1995 to promote the integration of the different institutional types, including colleges and universities, and to build one differentiated and articulated education and training system (Bolton et al., 2020). One such key mechanism was the South African Qualifications Authority (SAQA) Act, which was passed into law in 1995, with SAQA being tasked with developing a national qualifications framework (NQF) (RSA, 1995). The first draft policy on articulation was completed only in 2014, with the first policy being gazetted in 2017. The purpose of the articulation policies was to resolve the underlying philosophical gap and structural barriers to access and movement within and between institutional types. The Policy and Criteria for the Registration of Qualifications and Part Qualifications on the NQF were devised to

> establish and maintain coherence between the three Sub-Frameworks (S-Fs) in order to clarify, strengthen articulation between qualifications within each S-F and between the S-Fs, and support the coherence of purpose between education, training and development nationally (SAQA, 2013:5–6).

S-Fs include the General and Further Education and Training Qualifications Sub-Framework (GFETQSF), the Higher Education Qualifications Sub-Framework (HEQSF) and the Occupational Qualifications Sub-Framework (OQSF).

Despite these and other related policies and the political and institutional will to advance articulation, the creation of articulation routes or pathways continues to lag behind (Needham & Papier, 2018). Students who have completed a college education continue to find it difficult to gain entry to, and recognition in, universities (Terblanche & Bitzer, 2018; Bolton, Govender & Matima, 2019; Bolton et al., 2020). Failures to implement articulation at the systemic, conceptual and structural levels of education and training still occur (DHET, 2013; RSA, 2017). Among other obstacles, curricular misalignment seems to constitute a significant reason for the lack of articulation (Papier et al, 2016; NPPSET, 2017; Bolton et al., 2020), making it important to investigate the current state of TVET–university curriculum alignment.

This study reports on the findings of an investigation into whether one comprehensive university considered the curricula of colleges during the review of its curriculum. Before the presentation of the study findings, there is a brief discussion of the theoretical framework, which serves as the lens through which this study was conducted. This is followed by a review of the literature on the complexities involved in curriculum development and programme interface. This is followed, in turn, by a discussion of the competing interests between college, university, occupational and government stakeholders and a clarification of the ways in which these competing interests affect both the curricula and the interfaces between programmes.

Theoretical framework

Archer's constructs of structure (Archer, 1995), culture (Archer, 1996) and agency (Archer, 2000) constitute the framework for this paper. 'Structure' refers to relations (Archer, 2003) that are social in nature (Porpora, 2011) and 'culture' refers to the ideas, beliefs and theories contained in society's 'propositional register' (Archer, 1996:105), with propositional register being the ability to construct abstract thoughts in our minds and to do so independently of personal experiences. 'Agency' refers to the reflexive, creative, innovative and purposeful actions of people and the choices they make in their daily lives in order to shape and reshape social reality (Archer, 1996, 1995). Moreover, according to Porpora (2011:27), culture 'is what we collectively produce, and agency is what we do with it individually'. The university curriculum as currently structured constitutes the structure which impinges on whether and how academics review academic programmes, including the ideas and interests they advocate. Both the agency and the ideas of academics are crucial to determining whether curriculum reform involves consideration of TVET (technical and vocational education and training) college programmes and, if so, the extent to which such reform does.

Archer also theorises the constructs above as being different from, independent of and influential on each other (see Archer, 1995; 1996; 2000). She constructs the method of analytical dualism to separate the constructs temporarily 'in order to examine the *interplay* between them and therefore to explain changes in each and/or on all of them – over *time*' (Archer, 1995:66, *emphasis added*). From the interplay of constructs a social outcome occurs, but one of the constructs may have a more dominant influence on the outcome than the others.

This study sought to understand how agents influence the curriculum and academic programmes through the curriculum-review process. Agents are role players by virtue of the positions they occupy in the institutional departments and are bound by structural constraints both in and outside a university. The study also sought to describe those constraints and interrogate the ways in which agents navigated them. Archer (2000) foresees that academics can use their roles either to advance change in the curriculum structure or to maintain structures in line with their interests and the ideas they have about articulation and university relations with TVET colleges. As the literature indicates below, roles themselves have to be played within the confines of institutional logic, which tends to hinder any ideas that agents might hold.

Literature review

Curriculum for articulation

Articulation is fundamentally about curricula (Bawa, 2013), not universities or education and training institutions per se (Qonde, 2014). This implies that when qualifications are developed, multidimensional articulation routes should be mapped out and, considering the primary purposes of qualifications, they 'should also be designed with planned articulation routes at the outset' (NNPSET, 2017:22). In addition, institutions should have simplified rules that govern articulation (RSA, 2017). Articulation pathways should be created in such a way that there is no need for there to be credit-transfer agreements between different institutional types (Bolton & Samuels, 2016).

All curriculum design processes – for any institutional type and regardless of the purpose for which or the level at which a qualification exists or the subframework(s) in which a qualification resorts – should make provision for the creation of multiple pathways for students. However, the reality of the relations between TVETs and universities is that they are dynamic and complex, significantly affecting the process of curriculum development – on the basis of which articulation can either be fostered or hindered. These complexities and dynamics are discussed briefly below.

University–college curriculum (mis)alignment

In South Africa, the curricula of TVET colleges and universities are not yet properly aligned (Malale & Gomba, 2016; Graham et al., 2017; Needham, 2018). This is due, among other factors, largely to structural, conceptual and systemic factors (RSA, 2017). For instance, curriculum misalignment has the consequence of preventing students with a National Certificate Vocational (NC(V)) from gaining access to the programmes of other higher education institutions that offer disciplines and courses in the same field as their counterparts who have gained a National Senior Certificate (NSC) (Branson et al., 2015; Malale & Gomba, 2016). In a study by Bolton et al. (2020), some respondents said the problem is not misalignment per se; rather, it is the lack of willingness on the part of universities to accept applicants who have an NC(V).

Where colleges and universities have agreements in place, Gibbon et al. (2012) nevertheless claim that the way in which curricula are composed serves to obstruct articulation. These authors argue for linkages to be developed that enable the current system to be advanced towards greater curricular alignment, particularly between TVET colleges and universities. Furthermore, to ensure seamlessness of movement between different structured curricula or programmes, there must be, among other actions, a 'review of [the] NC(V) curriculum' and a 'restructuring of subject combinations at college for the certificate to enable strong articulation with university' (Gibbon et al., 2012:135). Moreover, Lortan (2019) adds that the right moment at which to consider building articulation routes should be during the conceptualisation of the new diplomas. However, this opportunity was not fully exploited, as the particular findings of this study show.

Bolton et al. (2020) recently found that students who have gained either a National Accredited Technical Education Diploma (NATED) or an NC(V) struggle to have their qualifications recognised by universities due to the breadth and depth of the college curriculum. This may point to a lack of interface between the different sub-frameworks. Gibbon et al. (2012) believe that the synergy of S-Fs must be deliberately and consciously worked on and achieved to the point where, if a possible interface between them is identified, a concerted effort must be made to put it into effect. For the system to be truly interconnected, there must be visible evidence of the alignment and facilitation of the different learning routes (Papier et al., 2016).

To this end, at the same time as qualifications are developed, the articulation routes should be mapped out, linked to the primary purposes of qualifications; and qualifications should also be designed from the outset with planned articulation routes being in place (NPPSET, 2017).

However, the above cannot be achieved without agency. For example, to reform a curriculum is to influence structural change in which agents have various vested interests either as groups or as individuals (Archer, 2000). These agents' interests could include either retaining or changing inhibiting structures and retaining or modifying any problematic perceptions they may have about college qualifications. This possibility of agential interests undermining articulation is hardly engaged with in the literature; structure is often given more precedence, which has led to the plethora of policies promoting articulation. This article contends that, in addition to building structural enablements, the exercise of agency is further required during curriculum mapping in the curriculum-review processes in order to explore all possible articulation pathways and to put them into effect. In this regard, Bolton et al. (2019) are correct in calling for a culture that encourages articulation between colleges and universities, a culture requiring agential awareness of the national imperative for advancing greater articulation.

College curricula as they currently stand are generally and heavily geared towards occupations and skills or competence (Terblanche, 2017; Needham, 2018; Needham & Papier, 2018; Terblanche & Bitzer, 2018; Madileng, 2022). However, the argument that Terblanche and Bitzer (2018) advance for leadership to promote curriculum change at the TVET level in order to keep programmes relevant to the industry or employers they serve should be

approached with caution. In the first place, from the point of view of policy, TVET colleges do not have the autonomy to change their curricula: the power to do so resides in the government in the form of the Minister of Higher Education and Training (Terblanche & Bitzer, 2018). In the second place, with restructuring or revising the curricula, the risk exists of demand-led college qualifications undermining programme interfaces. This is where curriculum designers in both colleges and universities, including interest groups, need to interact during the revision or realignment of curricula if they are to balance their respective interests. The way around this is to agree on specific articulation arrangements according to which different stakeholders – via credit-transfer policies and recognition of prior learning (RPL) – may construct a curriculum in ways that reconnect the college, occupational and university programmes, as has been suggested in the research project of Bolton et al. (2020).

There are examples of where the structures of the curricula between college and university have allowed for built-in articulation routes as a result of the historical relationship between the two institutions. For example, engineering qualifications at the Durban University of Technology (DUT) exemplify such strides towards facilitating articulation. Here, students can move from a National Diploma in Engineering at college to engineering qualifications at university, which entails transferring the credits for all their first-year or first-semester modules if the students have completed their N4 and N5 at college (Lortan, 2019).

According to this arrangement, the alignment of the curriculum designs of both university and college is also of such a nature that a student who is excluded is permitted to repeat any modules they failed at college and, if they pass satisfactorily, they are permitted to return to university, having gained credits for the modules they passed the second time round (Lorhan, 2019). This example practically and vividly suggests the need for collaboration between stakeholders to build a coherent system of education. However, such collaboration must also take into account the competing interests embedded in the make-up of different knowledge structures.

Collaboration and competing interests

Summarising the recommendations made in the SAQA–DUT study, Bolton and Lortan (2019) make two key recommendations in relation to the promotion of articulation: (1) There is a need for cooperation in the development of a curriculum so as to create conditions that make for successful articulation. Needham (2018) adds that collaboration should be included in the design of a curriculum, in line with the second recommendation, which is that: (2) 'The development of the NCV and NATED qualifications needed to incorporate articulation-by-design from the start' (Bolton & Lortan, 2019:17).

Collaboration should involve stakeholders such as the government, business, colleges, universities and quality-assurance bodies required to engage in the curriculum development process. In the process of collaboration, the problem of the negative perception of the TVET curriculum needs to be overcome from the outset. This problem of trust is not unique to South Africa: it exists even beyond its borders. For example, in the United States, it is alleged

that the college curriculum lacks quality (CCRC, 2015). In South Africa, their equivalent, the TVET colleges, similarly do not enjoy a good reputation among the universities. There is the perception that colleges offer education of a lower quality; therefore, the requirements for NC(V) candidates are higher than those for learners coming from Grade 12 (and having gained an NSC). As a result, an authentic, objective process of curriculum mapping, discussed in the next section, could be a significant solution to the problems associated with curriculum misalignment and it could also help to overcome the stigma attached to college education.

It should be borne in mind, though, that stakeholders have different interests which present a dynamic situation involving the nature, form and extent of their cooperation in the development of curricula and the implementation of adaptations – including the success or failure of collaborations and agreements. Notwithstanding the many successful and emerging articulation initiatives (Bolton & Lortan; 2019; Bolton et al., 2020), though, the work of Papier et al. (2016) and Needham & Papier (2018) stresses the value of collaboration, on the one hand, and the systemic, structural, conceptual and practical challenges brought about by the competing interests affecting the development of articulation routes in the system, on the other.

In support of their claims, Needham and Papier (2018) reflected on the implementation of an articulation project which involved the government, the insurance industry, colleges and one university in the Western Cape. The project was intended to facilitate the transition of students from college to university. An insurance industry-specific qualification, supported by a government-funded Sector Education and Training Authority (SETA), was offered to 100 candidates at five colleges. If successful, the qualification would facilitate student articulation to the commerce faculty at the university that participated in the project, and it was intended to enable students to study towards a diploma and a postgraduate qualification at that university.

Two findings from their study are important. First, out of the 100 candidates who commenced their studies at college towards a qualification as a financial planner, only 12 students passed their university diploma, and, of those, only six passed the postgraduate qualification. This very low success rate of students who intended articulating from college to university has also been experienced in France, where only fewer than ten per cent of those who articulated to university were able to complete their university degrees (Ananiadou, Field, & Chakroun, 2019).

Second, and most importantly, in the Western Cape study, out of the 120 credits received from the insurance SETA programme, only 12 credits were transferrable from the first year of college to the Bachelor of Commerce at the university in question (Needham & Papier, 2018).

The earlier study by Papier et al. (2016), which also related to an insurance SETA and involved study towards a qualification in Wealth Management, made similar findings after the mapping of two programmes. Both studies (Papier et al, 2016; Needham & Papier, 2018) concluded that the different purposes of the qualification stood in the way of effective articulation, in that no adequate fundamental academic curriculum for the two disciplines

existed at college to facilitate articulation into university and increase the chances of success once the candidates were admitted to university.

It was also found that it was not easy to set up a bridging programme to build the foundational disciplinary knowledge that was missing from the industry-imposed curricula at colleges, because no funding had been provided for it. Confirming this fact, Ananiadou et al. (2019) found that the foundational knowledge and skills critical to success at university are not embedded in the college curricula.

From the foregoing, it can be said that, whereas Terblanche (2017) is correct in asserting that curriculum change should target both industry needs and movement within higher education, there is a real possibility of one stakeholder affecting the ultimate content and structure of a programme. In the collaboration suggested by Needham (2018), if a market-oriented paradigm prevails, the required interface may be compromised. Needham & Papier (2018) point out that the difficulty of having two equivalent or complementary qualifications in place (one from college, another from university) resides in the contradictory paradigms about where knowledge is produced, the nature of the different sites of knowledge (work and university), and the quality and value of the knowledge in the workplace. For example, they point out that unitised qualifications are specific, prescriptive and competency-based and do not offer the disciplinary knowledge often offered by universities (see also Madileng, 2022).

Importantly, colleges and universities not only have peculiar interests, but also institutional logics that are different from the intrinsic logics in the NQF's unitised and modularised programmes, and these are reflected in the curricula they offer. Institutional logics have to do with the way institutions are structured and work and why they are structured and work the way they do, including what value they attach to, and how they value, learning from other institutions (Raffe, 2007). Effectively, they are driven by their own self-interest (Raffe, 2007). Intrinsic logic, on the other hand, has to do with what other bodies outside a university do and what their intentions are. The NQF, for example, calls for a single, integrated, although differentiated, system of education and training, and articulation is its key instrument to facilitate the unity and integration of the system. This means that institutional and intrinsic logics are not consistent and even clash with each other (Raffe, 2007; 2011). Raffe found that most of the barriers to a unified system in Scotland were institutional. This implies that policy mechanisms with their intrinsic logics must contend and harmonise with institutional logics (Raffe, 2003). The results in the present study indicate that the institutional context has remained somewhat unchanged.

For example, in addition to concerns about relevance to industry, universities tend to be preoccupied with such factors as institutional regulations (following rigid admission rules), the protection of academic disciplines from influences from outside, and funding considerations related to enrolments and graduations. So, when implementing externally induced policies meant for building a united system of education and training, they are bound to prioritise the foregoing constraints. Similarly, business, trapped in its commercial

logic, uses funding as a way of leveraging the propagation of unitised and modularised learning, thus compromising effective articulation between college and university. In such a case, the universities, concerned with their own priorities, cannot keep up with the proliferation of unitised learning at college, which Raffe (2013) regards as fragmenting learning and controversial.

Another crucial problem, as pointed out earlier, is that a college curriculum which is developed by the national government impinges on the creative agency of colleges (Terblanche & Bitzer, 2018). In contrast, it is the universities that have the leeway to create the curricula for the different disciplines they offer qualifications for. In revising curricula with articulation in mind and implementing boundary-crossing practices, it is therefore necessary to have in place painstaking curriculum mapping while at the same time considering the different paradigms that may exist between disciplinary and vocational knowledge.

Curriculum mapping

The finding by Needham and Papier (2018) that there were only 12 credits that could be gained and transferred from the occupation-bound qualification resulted in the recommendation of creative solutions such as the creation of bridging courses to facilitate articulation. Bolton et al. (2020) found that bridging courses enable articulation. These findings also confirmed the benefit of curriculum mapping between so-called 'sending' institutions (i.e. colleges) and 'receiving' institutions (i.e. universities).

Curriculum mapping is regarded as a fundamental inspirational force for the creation and sustainability of any continuous relationship between institutional types or any credit-transfer agreement or arrangement (Paez et al., 2011). It is about establishing an interface between two components of a qualification, such as units, subjects or modules (Jackson et al., 2011). Here, content- or subject-matter experts investigate every component of the sending and receiving qualification of a curriculum, the NQF level and the assessment practices before they make a professional judgement about the level of equivalence between the two programmes (Blom, 2013). Curriculum mapping also helps to identify inconsistencies in a curriculum (Makura & Nkonki, 2017).

When gaps are identified, the credit accumulation and transfer (CAT) principle could be considered, meaning 'access and success' through 'supplementarity' (SAQA, 2014: clauses 15a, 15d). In terms of this principle, what this means is that TVET students could be admitted to a university course on condition that they complete supplementary work before gaining a credit transfer (Lortan, 2019) – especially in cases where there is an over-alignment after the transfer of some credits from a sending institution. In this way, any possible duplication of learning is avoided (Paez et al., 2011).

Curriculum mapping is not without its difficulties, though. Some of the difficulties relate to the amount of time, energy and resources needed to map credit transfers on a case-by-case basis,

including the difficulties associated with the topics covered and the extent of their coverage (Paez et al., 2011). Mapping is also difficult when the ways in which courses are designed, described and assessed in each sector are different (Jackson et al., 2011). This is the case between the college and university programmes included in the study by Needham and Papier (2018).

It is indisputably a difficult task to establish the extent of equivalence between two courses (Kennepohl, 2016). If agents do not share an interest in building articulation routes, the complexities discussed above could amplify the impact and adversely affect whether curriculum analysis occurs at all with articulation to a university programme in mind. In addition, the process of mapping may cause reversion to the matching principle of articulation, a principle that may not always enhance effective articulation. These difficulties justify the necessity for agency in those institutional actors who are involved in curriculum reform or realignment for the purposes of articulation.

Methodology

In responding to the purpose of the study, two key questions were explored:

1. How do academics review curricula in their respective academic departments, considering the structural constraints between the college and university curriculum?
2. How do their review processes help build alignment of college and university curricula?

To answer these questions, this study employed a qualitative, single-case study methodology with embedded units. This allowed the case itself to be examined and also the data to be analysed within the case analysis and between the case analyses, inclusive of a cross-case analysis (Yin, 2003). The comprehensive university type (in the form of particular departments) was the unit of analysis, and the embedded sub-units included five departments that were offering national diploma programmes in the Faculty of Business Management Sciences (FMS). The university resulted from the merger of two technikons and a traditional university campus. At all times, the structural and cultural contexts were taken into account when making methodological decisions (Yin, 2003).

To collect data, the researcher interviewed a purposively chosen sample of seven participants from five national diploma programmes offered by the FMS. These participants were asked what prompted them to review the curricula of the programmes they offered, and whether, how and the extent to which they considered college curricula during the review process. Their responses shed light on their agential interests, including the structural context in which they exercised their agency and the ideas they shared about college curricula.

The participants comprised two deans in the FMS who were based at different campuses plus heads of department and lecturers who had been involved in admissions. Both deans had been working in the institution for more than ten years. Then there were two heads of

department (HoDs) – one managed Management and Human Resource Management (HRM) and the other managed Tourism Management (TM) and Hospitality Management (HM). At the time of the data collection, the HoD for the Accounting programme was new and unfamiliar with the context; as a result, one senior lecturer who had been in the department for more than ten years was interviewed. The remaining participants were lecturers who were responsible for admissions in Management and HM, respectively. The HM lecturer was a former HoD of the HM department before it was consolidated with TM under one HoD.

The programmes above were selected because they represent some of the diploma programmes that were offered at technikon campuses and had the potential to enhance articulation goals during curriculum review. The Accounting programme had a national higher certificate at NQF Level 5 in addition to a diploma; this diploma articulated to a Bachelor of Commerce degree in Accounting that was located on the traditional university campus. Apart from these, the university also offered engineering diplomas and degrees in law, social sciences, medicine, and the humanities. Owing to time and resource constraints, these programmes were not included in the units of analysis.

The data were collected through semi-structured interviews and from two university documents: University Articulation Guidelines ((UAGs), and the general prospectus of the university (the prospectus) and the faculty prospectus of the FMS. The prospectus contained the admission requirements for National Senior Certificate (NSC), National Certificate Vocational (NC(V)), and National Accredited Technical Education (NATED/N-programme) N3, N4, N5 and N6 candidates, Credit Accumulation Transfer (CAT) rules and Recognition of Prior Learning (RPL) policy provisions. Pseudonyms are used to refer to the participants in this study and the university's name has been omitted.

Inductive content analysis was used to analyse the results, and the categories considered emerged from the data analysis rather than from preconceived categories (Hsieh & Shannon, 2005).

Results

The report draws largely on the contributions of three participants – Nomonde, Sindiswa and Josh – and on extremely limited data from Gary. Although they dealt with admissions and were members of their departments, other participant responses were too lean; in any case, their responses are better expressed in the verbatim statements from the three listed above. Furthermore, the findings are drawn from UAGs, the 2024 university prospectus, and the prospectus of the faculty concerned.

Curriculum review

The study sought to determine whether curriculum reform or realignment considered articulation in ways that facilitated a programme interface between college and university.

The UAGs indicated clearly the need to consider college curricula in the review of university curricula:

> In order for a systemic articulation to be more effectively implemented, it is important that curriculum analysis is undertaken to consider the curriculum of NCV programmes offered at TVET and other colleges against the cognate programmes at the university. This exercise should include other qualifications quality assured by SETA/QCTO (Quality Council for Trades and Occupations), and offered at TVET and other colleges.

According to the UAGs, curriculum analysis would be conducted to determine *areas of difference* (theoretical and/or conceptual) and ways of reconciling any existing differences. In the same context, there was no direct talk of considering NATED programmes at the N4, N5 and N6 levels. The UAGs provided no more guidance than the above. The university's general prospectus for 2024 makes the 'general requirement for admission to study for a degree qualification' a diploma, which is a 'standard requirement', while it says that those possessing a 'TVET qualification … may apply' for admission. The prospectus makes no mention of concepts such as articulation, credit transfer, work-integrated learning or curriculum reform. The concept of curriculum appeared in the faculty prospectus, which provided for a faculty curriculum committee whose purpose was 'to provide strategic oversight on all faculty curriculum matters …'.

The faculty prospectus made no reference to the UAGs, and the curriculum committee was not guided any further than that it must perform the function of 'reviewing existing programmes and recommend replacement of irrelevant programmes/modules/courses' to ensure 'relevance' and response to 'identified needs' of the institution. The curriculum considerations of college curricula appear only by implication in the following statement in the general prospectus:

> It is left to Faculties to take a decision on the equivalence of Degree and Diploma courses undertaken at other institutions, with the proviso that Faculties will submit recommendations to Senate about the status of such courses.

Whereas four of the six departments included in the study had reviewed their curriculum more than once during the past five years, the review was not performed to facilitate college–university articulation. It was driven instead by external factors.

The HRM and Management Department, for example, was driven by market needs, advice from professional bodies and benchmarking from other universities. The universities, according to interviewee Nomonde, had moved from the National Diploma to a specific diploma of their own, leaving them (i.e. the university under study) a bit behind:

> We are looking at the problem we are going to have in future: of graduates that are going to be redundant and unemployable. So that is why we keep changing according to the needs of the market, and according to the advisory board.

To this end, the programmes under her leadership were removing some of the courses and replacing them with relevant substitutes:

> We have recurriculated our course from the National Diploma to the Diploma. That is why I was saying we have introduced courses like HR Information Systems. We are in the process of recurriculating [the] Management Diploma so that we can remove the Admin. courses, such as Administrative Management 1, 2 and 3, to introduce or to be replaced by Project Management 1, 2, 3, which is the thing the market needs.

In the redesign of the programmes above, including Tourism, there was no deliberate consideration of building articulation routes or an interface for college programmes. At departmental meetings, all of the participants reported that there was passive involvement in matters pertaining to articulation between universities and the college or academic departments. Asked about their influence on TVET in the revision or realignment of curricula, Nomonde said: 'We do not have the powers to influence them [colleges] to recurriculate when we are recurriculating, to see what we see.'

She suggested that TVET–university articulation may not occur in the near future:

> If they [TVETs] don't do what we are doing, probably this might affect them – after some time – if they don't move faster, with our pace, probably in five years' time we will not be able to absorb their students. They've got to change with [the] times.

Programme misalignment

There were misalignments between college and university programmes. While the UAGs made room for curriculum analysis and there was a broad university policy in the prospectus serving as a framework for credit transfer, no detailed policy on credit transfers existed in any of the departments under research to deal with the misalignments. Instead, different departments had different articulation practices in place.

While other departments had not performed curriculum mapping, HRM had done so and had found that college content overlapped between the first- and second-year levels for some of the four modules where credit transfer was usually enabled. This overlapping content represented over-alignment,[1] and also an underdeveloped credit potential,[2] if not an overload of the college content. NCV Level 4 in Tourism, according to interviewee Josh,

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1 'Over-alignment' refers to having first-year content spilling over the first trimester or so without the potential of gaining a credit for it, even for modularised courses.

2 An 'underdeveloped credit potential' means that there is a credit that could be possible only if more content were to be added to meet the conditions for transferability.

was under-aligned[3] in relation to the content of the first-year curriculum at university. Josh, carrying an academic transcript of a student from a certain TVET, suggested this under-alignment and articulation dynamic in the following words: 'If you check these subjects they are doing there and compare them with the ones that are done here [at the university], there is no alignment.'

He elaborated on this statement as follows:

> The challenge as I see [it] is that the kid is doing N4, N5, N6, and the subjects are four. The challenge we had was that this kid will do N4, 5, and 6, and we have here plenty subjects, and she would have only focused on four. … We agreed that we must admit them at Level 2 [year two] and help them do the courses that are not there. Remember, then, the four subjects are not in line … [Are they not in line in terms of the wording or content?][4] The challenge is there.

Owing to the lack of rigorous, deliberate curriculum analysis, it was a struggle deciding how to deal with N6 students, including the work-integrated learning (WIL) aspect:

> We were debating last year about … asking ourselves as the business faculty, saying 'ladies and gentlemen, at which level do we put such a student' [with N6+ WIL]. She has a [TVET] diploma, where do we put her? Where do we put her?

Interviewee Sindiswa highlighted the reality that the college programmes and qualifications were too narrow and too highly specialised from start to finish whereas the university offered qualifications that are much broader at the diploma level:

> For example, when you talk about Office Management and Technology from our side, we have Legal Practice, Communications, Information Admin., Business Admin. But for them, when they talk of Office Practice, it's only Office Practice. Everything they do is contained in the office work … not having a broader perspective of the entire programme that we offer in the university.

She added:

> In most cases, they specialise in terms of modules. They offer courses in terms of modules. We offer courses in terms of full-year subjects, not six-month subjects as they are having. So, that is where we are unable to just accredit them in all the things they are doing.

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3   'Under-alignment' involves either the absence of certain university subjects and modules in the curriculum or inadequate coverage of topics as college subjects and modules.

4   This question was addressed to the participant to indicate the flow of the conversation and to help the reader follow the quoted response.

However, there was no plan in place to overcome these structural misalignments. In the case of HRM, students were doing four modules at the level of N6 at college; the university was teaching five modules in the first year (see Table 1). Accounting as a subject was not offered at the colleges of the students the department had become familiar with. As a result, the students had to study Accounting in the first year while they were taking other second-year subjects.

In the case of Management, there were five subjects in the first year of university, whereas TVET candidates could, according to Gary, be credited for only two or three of the first-year subjects (see Table 1).

So far as the N6+WIL was concerned, Tourism seemed to have a substantial misalignment, far greater than that found in Management and HRM. The misalignment took the form of under-alignment, as explained above and illustrated in Table 1, with as many as eight university modules not having been taught at college.

TABLE 1: Misalignment of TVET and university programmes

ACADEMIC PROGRAMME	NUMBER OF MODULES AT COLLEGE	NUMBER OF CREDITABLE MODULES	MODULES NOT TAUGHT AT COLLEGE
HRM	4	4	1
Management	4	3	2
Tourism	4	4	8
Hospitality	4	No case to refer to	No case to refer to
Accounting	Differs per TVET	Sometimes all first- and second-year; sometimes some, not all.	Differs from college to college

Articulation between departments or faculties

As far as intra-institutional articulation practices are concerned, document analysis revealed that, regarding interdepartmental and interfaculty articulation, the university had created three routes from the NQF Level 5 certification, National Higher Certificate: Accountancy, to a degree or a postgraduate programme.

Alternatively, students could articulate from the Faculty of Management Sciences (FMS) to a Post-Graduate Certificate in Education (PGCE) in the Faculty of Education. The PGCE allowed candidates who may have started at college and progressed through to the NHC: Accountancy to change direction from FMS to a teaching occupation and then to articulate vertically from there to an honours degree in Education (an NQF level 8 qualification) right up, after a master's in Education, to a doctoral degree at NQF level 10. Even the diploma

programmes of other faculties (such as Engineering) were able to articulate in this manner, provided that an applicant held a diploma with two major teaching subjects.

This practice at the level of credit transfer was evidently applying the principles stated in the UAGs. The UAGs provided a student holding a TVET qualification with an opportunity to articulate to a university's diploma programme or a cognate qualification. However, the practices above have not permeated college programme articulation at the diploma level of the departments. Even some internal arrangements were scattered and largely uncoordinated: the participants reported that sometimes students struggled to enter a cognate qualification because they did not meet one element of the criteria, as was the case between some of the FMS programmes and the PGCE.

Discussion

The following themes emerged from the results above: programme misalignment and the need for curriculum mapping. These two themes are discussed in this section.

Programme misalignment

The first glimpse of failure to conduct deliberate curriculum analysis appears in the evident misalignment of the college programme with the university's one, and this is despite the UAGs suggesting that colleges be kept in mind when conducting curriculum analysis. The misalignments identified imply a waste of both time and money as being against the objectives of the articulation policy (see RSA, 2017).

Whether the wastage can be avoided or not requires an understanding that the misalignment stems from the different purposes for which academic and vocational programmes are established, as implied by interviewee Sindiswa. The different purposes of programmes affect the way a curriculum is designed and developed and also the decisions about which topics are to be included in or excluded from the curriculum – including the ways in which they are taught, and the students are assessed (Madileng, 2022).

Regarding the purposes of modules, there also seems to be a problem with the colleges' modules and/or their allocation to semesters versus the university's year-long courses, as Sindiswa pointed out, and also complexities related to the division of learning into units for occupational qualifications, as was found by Papier et al. (2016) and Needham and Papier (2018), and confirmed more recently by Bolton et al. (2020). These structural constraints seem to play a dominant role in contributing to the nature and extent of the misalignment.

The structural reality is that colleges necessarily prepare students for the workplace and for occupational purposes (Needham & Papier, 2018). Therefore, in the design of curricula or qualifications, foundational academic content is not included because the focus is on attaining certain levels of competence only (Madileng, 2022). This explains the complaint by

Sindiswa that colleges offer narrow and highly specialised programmes, which is contrary to the approach of universities, that is, to impart conceptual content knowledge. From the above it is evident that, although not inevitable, misalignment is more likely to continue to occur in future.

Perhaps the dynamic problem under consideration can be attributed to both the interests of the institutions and the external interests involved in each. The breakdown in alignment arises when interests kick in – when, for example, an insurance SETA prescribes a curriculum and demands that it be taught in such a manner, on the one hand, and when universities are not even familiar with the unit- and module-based nature of vocational and occupational learning, on the other. In a nutshell, there are, logically speaking, competing interests among college, university, government and business.

When Nomonde said that they adjust their curricula based on the advice of professional bodies and market-related needs, she was unwittingly revealing the constraining power that these external factors have over both colleges and universities in the area of curriculum design. She also revealed the power universities have to insulate themselves from the curricular difficulties that colleges encounter, such as those found by Needham and Papier (2018) in their study described above.

This then raises the question: How can convergence be achieved at the curriculum-design level to reduce misalignment? While a part of this convergence lies in change at the level of ideas (Archer's cultural system) about these knowledge structures (vocational versus academic qualifications), another part of the answer lies in curriculum mapping that could minimise the misalignment. The mapping of curricula is agential in nature and actors must be required to navigate the different structural mechanisms at play.

Programme interface: Agency in curriculum mapping

The results show that the institutional actors who participated in the study were engaged in the quasi-, ad hoc and undeliberate mapping of college–university curricula. Those participants who engaged in curriculum mapping (i.e. Josh and Nomonde) were doing so for the purposes merely of deciding on the criteria for gaining admission to a university programme and the number and nature of the credits needed to transfer from college to university; it was not their remit to decide about what to do with misalignments per se.

This distinction is important because it explains why, when misalignments were discovered, credits were not granted, and also why no supplementary curricula were put together to avert such misalignments. Nor was any further effort put into curriculum review as a response to this structural reality. At the time of the interviews, there was no policy mechanism in place for faculty curriculum committees; this was adopted later, but with very little guidance, as was reported above.

At the level of structure, there was only an institution-wide policy on articulation and credit transfer, not one in individual academic departments which were confronted with curricular complexities. At the role level, it appears there was no interest in creating pathways to greater articulation and credit transfer. The very articulation pathways found in many departments were historical because the comprehensive university also offers technikon-type programmes (Lortan, 2019), not because any agential work was done to build more pathways after the merger of the two types of institution.

In fact, the approach towards the articulation problems that arose in departments was passive, even towards intra-institutional articulation questions. Perhaps, then, the problem of the failure to keep college curricula in mind during curriculum design at universities lies beyond the realm of curriculum mapping. In the doctoral study from which these results were extracted, it was reported that the institutional actors interviewed did not have a deep or dynamic knowledge of the intricacies of articulation (Mantashe, 2022).

Some of the participants (such as interviewee Gary) appeared not even to have read the general institutional policy and credit-transfer guidelines in the prospectus; and, given the knowledge they demonstrated about articulation, it does not seem possible that they would intentionally have engaged in relevant and robust systematic curriculum mapping for articulation on a complex scale.

Two contentions are worth offering regarding the importance of agential knowledge: first, curriculum mapping requires of the curriculum designers that they be in possession of at least appropriate knowledge of the objectives as set out in the NQF and of the institution's articulation policy, of subject or module expertise, and of a transdisciplinary disposition and agency. Knowledge of these elements can consciously impress upon institutional actors the need to promote the ideas and practices of articulation. This does not suggest that knowledge is enough. The institutional concerns about the reputation of college curricula and the fact that there are disparities between NSC and NC(V) and NATED qualifications, their own needs as articulated in the faculty curriculum committee, and funding concerns, play a crucial role in the review of the curriculum.

Second, following on the preceding argument, namely that knowledge is a prerequisite to exercising agency in particular ways during the curriculum development or review processes, the absence of a deep knowledge of articulation hampers the possible emergence of the required interest in the idea of articulation that could otherwise exist and affect articulation during curriculum mapping.

It should be stated that this article is not arguing that knowledge of articulation leads to an automatic interest in promoting articulation practices during curriculum analysis or programme review; it does, however, pave the way for that possibility. Moreover, if an agent develops an interest in promoting articulation, the author argues that creativity in

the use of curriculum mapping, along with other articulation tools such as learning outcomes and learning descriptors, could be the outcome.

Given the tedious and complex nature and process of curriculum mapping as articulated by Paez et al. (2011) and implied in the work of Makura and Nkonki (2017), there is a need for institutional actors who are well attuned to the project of building interfaces between college and university programmes as espoused by articulation-related policies. In the case of the present study, there was little enthusiasm for, and commitment to, driving articulation – it found that even potential articulation conversations with the colleges nearby the institution under study collapsed (Mantashe, 2022).

Closing structural gaps; creating pathways

As pointed out in the findings section, the articulation guidelines of the university created structural enablements that could have been used to facilitate the much-needed interface between college and university qualifications. Keeping in mind the different knowledge structures and purposes of the two institutions, there has to be a more deliberate mapping of the curricula of the two. It is by identifying inconsistencies between curricula that the CAT policy, which suggests the principle of 'access and success' through 'supplementarity' (SAQA, 2014: clauses 15a, 15d), could effectively be considered. According to this principle, TVET students could be admitted on condition that they do supplementary work before they are awarded credits. The findings show that this was not done for the reasons already advanced above.

Yet this principle was successfully applied in the Engineering faculty at the DUT: in accordance with the principle of supplementarity, a short course was introduced to create a bridge for the college student with the requisite credits to benefit from a credit transfer (Lortan, 2019). This confirms the significance of the intentionality of institutional actors.

Finally, mapping, which some participants relied on when taking articulation decisions, may be seen as either a contradiction of other articulation instruments such as learning outcomes (LOs), learning descriptors (LDs) and programme exit outcomes or a process that is at least inconsistent with them. Indeed, all the evidence points to university actors trying to match the two qualifications rather than trying to explore where the two stand in the LDs, which equivalences can be found in LOs, and the extent of the gaps and inconsistencies in the substance of the two different programmes, those of the college and university.

Despite the possibility of reversion to the matching principle, it is contended that curriculum mapping cannot be discarded completely. Instead, by creative means, it could be carefully enjoined in the use of LOs, LDs and programme exit outcomes as instruments of articulation. However, this requires a substantial amount of human agency and advocacy on the part of institutional corporate agents and individual actors in their respective academic departments. As the CCRC (Community Council Research Center) (2015) counsels: institutions should

commit themselves to, and make changes in, their practices related to curriculum alignment and collaboration with one another.

How does Archer help us understand the findings?

Whereas knowledge structures, and therefore curricular structures, are different and constrain institutional actors, this difference does not sufficiently explain why recurriculation in the university concerned did not take college curricula into account. After all, policy makes provision for overcoming the differences. First, it is Archer's theoretical work which illuminates the reality that curriculum review involves multiple powerful interest groups – government, employers, professional bodies, academics – with vested interests and with different bargaining powers to influence the structure of the curricula of college and university. Importantly, the unitisation of learning and modularisation, which contribute to curriculum misalignment, reflect the complexity and multidimensionality of college–university structures and the tensions between the interests of the powerful groups involved in shaping the South African education and training environment.

Archer's work also shows us that the structural constraints beyond the control of each university and academic seem to limit what institutional actors think is important during recurriculation. Second, external structural factors appear to influence the kinds of idea that institutional actors hold about the qualifications they offer. And these ideas (relevance to industry, reputation of college curriculum, funding, etc) preoccupy actors even in the presence of policy mechanisms that exist within and outside of universities.

This explains the limitations of the intrinsic logic of modules and unitised learning and the power of institutional logic in the context of implementation at universities (Raffe, Croxford & Howieson, 1994). The predictive power of Archer's work consequently lies in the fact that, if different stakeholder interests are not harmonised, along with intrinsic and institutional logics, as Raffe (2011) suggests, especially also at the level of ideas where tensions persist about how to proceed, it is hard to see how curriculum alignment could be fully achieved.

Conclusion

From the foregoing discussion about the misalignment of college–university academic programmes and its implications for curriculum development and the exclusion of college students from universities, it has been shown that curriculation review and realignment could be conducted without any reference to college programmes for equivalent subjects or disciplines. The result of this approach could be that the structural aspects of programmes whose curricula have been adapted could drift further apart and be contrary to the notion of programme interface. However, this drifting apart could occur without the actors' deliberate intention of avoiding college–university articulation. This outcome could occur because curriculum reviewers may be preoccupied with their programmes being relevant to the market and satisfying the requirements of professional and occupational bodies.

The study also reveals how vital it is that actors take an interest in college–university curriculum-articulation questions, just as articulation policies are vitally needed in departments to govern and guide articulation processes. Two implications arise here: first, while they are necessary, the university policies promoting curriculum articulation and programme interface may not be adequate to resolve the problem of the misalignment of the college and university curricula. Academic departments should have in place policies on both articulation and curriculum development, and reviews should be explicit about college curricula. Second, and consistent with the preceding assertion, to facilitate agential interest in articulation, articulation officers at institutions must not only ensure that there are articulation policies in their departments, but also that articulation principles are infused into the processes of curriculum revision and curriculum mapping.

Furthermore, inter-institutional and stakeholder involvement should foreground collaborative work regarding articulation, while concerted efforts must be made to balance stakeholder interests (college, government, university, occupational entities, professional bodies). In addition, vocational and academic knowledge structures must be thoroughly investigated and aligned, and the indifference of agents and their unwitting complicity during curriculum revision and realignment must be nipped in the bud.

Limitations of the study

This study did not extend to other academic programmes offered in the university, particularly those technikon-type diplomas in the Engineering faculty, due to time constraints. As a result, it is not possible to extend its findings to other disciplines in the same university. The interpretation of the findings must be understood, therefore, in the context of the FMS disciplines in the technikon-type of programmes (diplomas).

Future research

This study has prompted a need for a wider investigation into the institutional structures and processes universities put in place to create the conditions for considering colleges in the review of curricula. Moreover, it may be useful to examine whether and how creative forms of agency are cultivated by institutions to facilitate the operationalisation of (and within) the constraints of articulation policies during curriculum-review processes and the development of effective multiple pathways in comprehensive universities and universities of technology.

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