



# Information technology competence in undergraduate Public Administration curricula at South African universities

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## Abstract

This article reports on research on whether undergraduate Public Administration curricula at South African universities should provide for information and communication technology (ICT) competence and, if so, whether universities actually provide such competence. Both the context within which public servants work and their required vocational and professional characteristics have been shown to support the expectation that the learning of ICT competence be included in the undergraduate Public Administration curricula at South African universities. However, only those universities offering a National Diploma in Public Management include ICT competence as a separate module. The research findings confirm that ICT competence should indeed be included in undergraduate Public Administration curricula due to the need for contextual relevance, and the specific professional and vocational requirements of the public service. It is thus suggested that institutions of higher education, specifically in South Africa, assess their undergraduate Public Administration curricula by applying these curriculum requirements.

## Points for practitioners

The study on which this article is based addressed the relevance of Public Administration curricula to the information and communication technology (ICT) requirements of vocations and careers in the public service. The need for contextual relevance of curricula as well as meeting the professional and vocational requirements of public service receive specific attention.

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e-government, ICT, professionalism/professions, public administration, science administrative, service delivery

**Introduction**

Governments worldwide are under pressure to provide advanced technology-enabled public services to their citizens. Not only is information and communication technology (ICT) regarded to be ‘meaningful as a functional extension – not a replacement – of the government that people already know and are familiar with’ (Nam, 2012: 364), but it is also seen to play an important role in public administration and management reform (Shim and Eom, 2009: 100). As it is generally accepted that ICT-enabled public services have the potential to increase productivity, good governance and accountability (Shim and Eom, 2009: 100), there is a quest for high-quality technology-enabled public services. This implies that public servants and managers need special ‘kinds of competencies’ when executing the public functions expected from them (Awortwi, 2010: 725). Greisler (2008: 318) refers in this regard to ‘a skill-set that is transferable to a host of professional settings, public or private; national or international; large or small; service or manufacturing; in all the possible combinations’. University education in Public Administration is expected to be an important role-player in providing the necessary ICT competence as a transferable skill-set (Greisler, 2008: 518) to current and future public servants (Cepiku, 2011: 380) through scientifically inspired career education (Pauw, 1995: 10–11). Within the South African context this career education already starts at undergraduate level (Department of Higher Education and Training, 2012: 72–75). This article specifically focuses on career education at the undergraduate level due to the vast number of undergraduate students and their consequent impact on the world of work (Department of Higher Education and Training, 2012).

This expectation introduces three key concepts into the discourse on the role and task of higher education institutions (HEIs) with regard to preparing students for the world of work, namely *graduateness*, *employability* and *digital literacy*. For the purpose of this article, *graduateness* is regarded as ‘a suite of attributes which graduates acquire during the course of their university study’ (Chetty, 2012: 9), while *employability* refers to the ‘capacity of graduates to enter the national or international workplace’ (Chetty, 2012: 12).

One of the attributes required from employees by the world of work is *digital literacy* (Ungerer, 2012: 496–498). Ungerer (2012: 497) identifies three branches of digital literacy skills, namely *information skills*, *transferable skills* and *ICT skills*. The concept of ‘*information skills*’ refers to the ability to gather, process and disseminate information, while the concept of ‘*transferable skills*’ denotes skills applicable in diverse, complex and changing settings (Greisler, 2008: 520). *ICT skills* are those competencies related to the capacity to use information and communication technology in managing and processing information (ITAA, 2007).

The study reported on in this article sets out to assess whether the undergraduate Public Administration curricula at South African universities should provide and do provide for the instilling of ICT competence needed for the provision of technology-enabled public services to the citizens of the country.

The methodology applied in this study is briefly described in the next section. The article will subsequently report on the theoretical perspective used to determine whether undergraduate Public Administration curricula at South African universities should include ICT competence, and a qualitative assessment of the context and the content of Public Administration curricula at South African universities. The last part concludes on the theoretical implications of the findings.

## Methodology

The study employed a qualitative case study to explore Public Administration curricula at South African universities as a 'bounded system' (Plano Clark and Creswell, 2010: 243). The study started with a review of scholarly literature related to assessing curricula at institutions of higher education. From the review of the limited literature on Public Administration curriculum development as well as the rich literature on graduateness, employability and curriculum design, three broad themes in the discourse on curriculum development and assessment were identified as the theoretical perspective for this study. These three themes were used as a framework to qualitatively assess the unit of analysis for this study, namely the Public Administration curricula at the 20 South African universities offering Public Administration as a subject.

The two researchers did the assessment in two phases. First, by exploring the context of Public Administration curricula at South African universities through a problem-space analysis, and second, through a directed content analysis (Hsieh and Shannon 2005: 1281) of the undergraduate Public Administration curriculum documents as included in the official calendars of the 20 selected universities. The content analysis focused predominantly on whether module titles contained the words 'information' or 'technology'. The purpose of this analysis was primarily to determine whether ICT competence is facilitated at all, and not how sufficiently it is facilitated.

## A theoretical perspective on assessing curricula

In searching for a theoretical perspective for assessing curricula in Public Administration in the light of the current trend towards globalization, one of the seminal works by Greenwood and Robins (1998) was used as a point of departure. In their article they discuss two models for curriculum development, namely the 'outsider influence: ideological (government)-cultural (professional) cycle' (Greenwood and Robins, 1998: 410) and the 'insider influence: the rational curriculum change cycle' (Greenwood and Robins, 1998: 411). The outsider model, developed by Wilken (1996: 68) consists of four phases, namely (a) ideological

intervention, (b) curriculum restructuring, (c) selective curriculum conversation for professional benefits, and (d) ideologically receptive curriculum.

The insider model consists of five phases, namely (a) establishing curricular outcomes, (b) innovations necessary to achieve outcomes, (c) assessment and evaluation of innovations, (d) reflections on further refinements to innovation, and (e) incorporation into the curriculum, or rejection of innovation (Greenwood and Robins, 1998: 411). Greenwood and Robins (1998: 419) conclude that both models fail to offer a coherent account of curriculum development in Public Administration. The 'strategic-contingency approach to management training' suggested by Wooldridge (2004: 385–403) shows some similarities with the outsider model discussed by Greenwood and Robins, but may probably be more suitable for short-term training interventions on a consultancy basis as it does not offer a coherent model for assessing Public Administration curricula. While Greisler's case for 'transferable skills', and specifically his reference to 'the path from awareness to understanding', is highly relevant to the discourse on curriculum development (Greisler, 2008: 518–535), his case can easily be accommodated in the 'selective curriculum conversation for professional benefits' phase of the outsider model as described by Greenwood and Robins (1998: 410). Although Greisler's suggested core curriculum for public administration does not include information communication technology competence, his reference to a curriculum providing for 'techniques that are proven to enhance efficiency, effectiveness, and economy' (Greisler, 2008: 533) indeed opens the door for a curriculum conversation as suggested by Greenwood and Robins (1998: 410).

In order to find an appropriate model, the literature review was expanded to include non-Public Administration literature on curriculum design, graduateness and employability. The contributions by Mischke (2010: 145–163), Nöthling et al. (2009: 3.4), Chetty (2012: 5–24), Makhanya (2012: 25–44), Prinsloo (2012: 89–102), Coetzee (2012: 119–152), Holtzhausen (2012: 185–206) and Ungerer (2012: 493–514) directly informed the development of an appropriate assessment model for this article. Three broad themes in the discourse on curriculum development and assessment were identified from these contributions. These themes resonate specifically with some of the steps of the 'simplified process for designing your curriculum' suggested by Nöthling et al. (2009: 3.4) in an unpublished internal working document used at the University of South Africa. These themes, which are discussed in the following paragraphs, are the contextual relevance of curricula (also referred to as the 'problem-space analysis'), the professional characteristics, and the competence needed by the learner (curriculum content).

### *Contextual relevance of curricula*

Within the discipline of Public Administration, the contextual relevancy of curricula has become a major consideration as the external (profession and practice) influence in curriculum design has gradually increased since the mid-1980s (Greenwood and Robins, 1998: 419). Furthermore, it has been realized that the

context in which the learner and the future employee live, study and work, needs to be taken into consideration in the design of curricula – ‘active future projection’ as so eloquently referred to by Greisler (2008: 519). The context of the future public official includes *inter alia* the nature of the state (e.g. developmental state), places, situations or spheres in the context, role-players in the context, typical problems encountered, and social forces influencing the context (Greisler, 2008: 533; Nöthling et al., 2009: 3.5; Wessels, 2012: 164). In terms of curriculum development, Mischke (2010: 152) uses the concept of ‘responsiveness’ when referring to ‘a sensitivity and continuous awareness of societal expectations, reflected in our qualifications and curricula as they respond to the needs and challenges faced by our students and community’ (UNISA, 2010: 12). She specifically refers to the UNISA Curriculum Policy requiring curricula to be responsive to the local, continental and international context (UNISA, 2010: 12). It is her reference to the increasingly ‘international characteristic of UNISA’s student profile’ as well as the ‘increasing globalization of the application contexts of curricula’ that needs special consideration (Mischke, 2010: 159). The global, continental, local and by implication the technological nature of the learning context has specific challenges for a curriculum preparing future public officials for their world of work. These challenges include *inter alia* the lack of academic writing skills, the inability to apply theoretical knowledge in the workplace, and the quest to deal with the ever-changing technology (Wessels, 2012: 166). The latter results in HEIs having to provide the ICT competence level for effective learning as required by the world of work (Makhanya, 2012: 31). From a global contextual relevancy perspective, there is no doubt that Public Administration curricula should include future public servants acquiring ICT competence.

### *The professional characteristics of the future participant in the world of work*

The second theme in the curriculum development discourse relates to the professional characteristics of the learner and by implication of the future participant in the world of public service work. With regard to the link between a curriculum and the learner’s future world of work, the literature uses concepts such as ‘graduateness’ and ‘employability’. Chetty (2012: 12) regards graduateness as the skills, knowledge and understanding of graduates, while employability is seen as a concern ‘with the capacity of graduates to enter the national and international workplace’. Coetzee (2012: 126) provides a more comprehensive definition of graduateness, namely the ‘inherent characteristics (transferrable meta-skills and personal attributes) of graduates . . . that differentiate them as responsible, accountable, relevant, ethical, enterprising citizens, and employees of choice in the workplace’. Her definition of employability is also more comprehensive than the one provided by Chetty, namely the ‘career-related attributes and dispositions which promote adaptive cognition, behaviour and affect, and change the individual’s suitability for appropriate and sustained employment opportunities’ (Coetzee, 2012: 126). There seems to be consensus among scholars who have published on

graduateness and employability that one of the fundamental attributes implied by the concept 'graduateness' is 'presenting and applying information skills' (Coetzee, 2012: 126; Holtzhausen, 2012: 194; Ungerer, 2012: 496–497). Ungerer (2012: 497) categorizes this specific attribute as part of 'digital literacy', which refers to 'the ability to appreciate the potential of ICTs to support innovation in industrial, business, learning and creative processes'. She goes on to state that learners 'need to have confidence, skills and discrimination to adapt ICTs in appropriate ways' (Ungerer, 2012: 497). Where the first theme in this discourse focuses on the context of the learner, the discourse in this particular theme focuses on the professional or occupational requirements of a curriculum. The literature on graduateness and employability has shown that a curriculum needs to provide for certain generic meta-skills (including ICT skills) and personal attributes as well as job-specific skills needed for the appropriate preparation of learners for the world of public service work. These requirements need to be transferred into curriculum content, which will be discussed in the next section.

### *Competence needed by the learner*

Bearing in mind the discourse on the contextual relevance of a curriculum and the requirements of graduateness and employability, which need to be met by a curriculum, the third theme of this discourse focuses on the ability of a curriculum to provide for the learning of the specific competence needed by a future participant in the world of work. Within the framework of contextual relevance, graduateness and employability, a curriculum needs to provide for the learning of those competences needed by a future participant in the world of work to fulfil his or her role effectively (Hager and Butler, 1996). Brinkerhoff and Brinkerhoff (2006: 6–7) classified this competence as (1) 'lay-of-the-land' competencies relating to a general understanding of how things work; (2) technical skills competencies; and (3) people skills competencies. The ICT competencies needed by future public officials are part of the category 'technical skills competencies'.

From the above it can be deduced that the specific context and professional requirements applicable to public servants should be taken into account to determine whether undergraduate Public Administration curricula should include ICT competence. The next section reports on the problem-space analysis of the context of South African public servants.

### **Determining the contextual relevance of curricula through a problem-space analysis**

The context of higher education curricula consists mainly of the institutional and policy imperatives of the macro regulatory institutions, the globalized social context, the diversity of places where the typical learner will work, the role-players influencing the learner's current or future work environment and the typical problems encountered within this context (Wessels, 2012: 164). It is thus necessary to

determine whether the context within which public servants work requires ICT competence in undergraduate Public Administration curricula.

The macro regulatory context of Public Administration curricula is, however, much broader than that of a specific profession or vocation. Similar to the National Vocational Qualifications (NVQs) in the United Kingdom (Greenwood and Robins, 1998: 417), the curricula of universities in South Africa are developed within the macro institutional framework of the Higher Education Quality Committee (HEQC) and the South African Qualifications Authority (SAQA). The HEQC is a permanent committee of the Council on Higher Education (CHE), which is responsible for quality promotion and assurance in higher education (CHE, 2009). All higher education programmes, including Public Administration programmes, need to be accredited by the HEQC before they can be offered by a public or private higher education institution (CHE, 2009). The possible ICT content of a Public Administration curriculum at an institution of higher education in South Africa is thus subject to the regulatory nature of the quality assurance and accreditation context provided by the HEQC.

As the study being reported here specifically focused on the ICT content of Public Administration curricula, clarity on the role-players in the 'problem-space' context determining the ICT competence of public servants is thus necessary. In this specific context, the Organization for Economic Cooperation and Development (OECD, 2002), the Economic Commission for Africa (2003) and the e-Government Toolkit (2009) all regard ICT as key to government strategies to reform and improve public service delivery and public accountability and to broaden the opportunities for citizens to participate more effectively in the global information economy, society and government. Other outcomes include the saving of time and money, streamlining work processes, enabling easier access to information, and improving decision-making and data security as some of the advantages of the application of ICT in government departments (Brown and Brudney, 1998: 423; Lodge and Kalitowski, 2009: 39).

The social dimension of public servants' problem-space context is known as the knowledge-based economy and the information society (DTI, 2009a). The demand for and use of ICT in a global knowledge-based economy and information society has prompted governments to utilize ICT increasingly to provide citizens with more information and better services (DTI, 2009b). Within the context of public service delivery, Termini et al. (2011: 191) observe that ICT is an effective tool for enhancing accountability as it provides citizens with accurate, complete, understandable and authentic information needed to hold government accountable. In this regard, Nam (2012) refers to a two-way interaction between government and citizens, for example through live chats and blogs.

This two-way interaction is integrated in various ICT initiatives launched by the South African government, such as e-filing of tax (SARS, 2013), the Department of Trade and Industry's Broad Based Black Economic Empowerment website (B-BBEE) (DTI, 2009c) and PayCity (2013) that assist citizens in a safe and quick manner to make payments to local authorities for a number of services,

for example rates and taxes, vehicle licences or prepaid electricity. Currently, all national and provincial government departments and a growing number of local governments have websites and e-mail addresses (Farelo and Morris, 2006). Some sectors of government are even making use of blogs and social media, for example the Chris Hani District Municipality has a blog where residents can leave comments for the municipality or add new topics for discussion (Chris Hani District Municipality, 2010).

It is evident from the above that public servants work in the context of the so-called 'knowledge economy', in which it is not only expected of them to provide citizens and government with accurate, complete, understandable and authentic information, but also to render public services increasingly through the application of ICTs. This context requires public servants to be competent in the skilful utilization of these technologies.

### **Graduateness and employability requirements: information and communication technology competence as part of the core professional characteristics of a typical public servant**

It can safely be assumed that the subject Public Administration is offered for the purpose of professional or vocational preparation of future public servants. This assumption is confirmed by the view of the International Association of Schools and Institutes of Administration (IASIA, 2009) that, as the public seeks high-quality services, a professional performance is expected from the public service. Professional service delivery implies a high competence level from public servants. The purpose of this section is thus to determine whether the core professional characteristics of a typical public servant, as articulated in specific global graduateness and employability requirements, include ICT competence.

Like Hager and Butler (1996), we use the concept 'competence' to refer to 'the ability of a person to fulfil a role effectively'. This meaning relates strongly with the definition of the concept 'competence' in the Public Service Regulations (2001: B.2(b)), namely '... the blend of knowledge, skills, behaviour and aptitude that a person can apply in the work environment, which indicates a person's ability to meet the requirements of a specific post'.

With regard to the graduateness and employability of future public servants, it is widely expected of universities to enhance professional competence by providing high-level Public Administration education (IASIA, 2009). IASIA expects from Public Administration curricula at universities all over the world to enhance students' professional competence regarding values, ethical behaviour, knowledge, respect for life, transparency, accountability, recognition of global interdependence, analytical and critical thinking, dealing with complexity and uncertainty, lifelong learning, internationalization and globalization, new modes of communication, and collaborative government (IASIA, 2009).

With a competence-based approach to public administration education, we assume that there are certain fundamental or core competences that a professional

public administrator must have, and that educational excellence requires that the curriculum of a public administration degree be built around the provision of these competences. This assumption is supported by Rosenbaum (2007) who includes technical skills in a list of competencies that he believes a public administrator should have. Termini et al. (2011: 191–192) support the inclusion of competence in ICTs by arguing that the technology processes directly affect the work of public servants with the consequent imperative for ICT competence. Moreover, these authors have indicated that ICT competence enhances accountability and transparency within public institutions (Termini et al., 2011: 191–192).

From the above, it can be seen that IASIA and various scholars regard ICT competence as fundamental to supporting the professional competence expected from public servants. With this in mind, one can rightfully expect undergraduate Public Administration curricula at South African universities to include the learning of ICT competence as part of the professional preparation of public servants.

### **The inclusion of information and communication technology competence in curricula: a directed qualitative content analysis of Public Administration curricula at South African universities**

Bearing in mind the above expectation that undergraduate Public Administration curricula at South African universities should include the facilitation of ICT competence, it has to be determined whether this is indeed the case. In South Africa, the Public Administration is offered as a subject of study at 20 universities, of which six are comprehensive universities, ten are traditional universities and four are universities of technology. A directed content analysis of the undergraduate Public Administration curriculum documents as included in the official calendars of the 20 universities offering Public Administration as a subject has been carried out in order to identify any module title containing the words ‘information’ or ‘technology’. The purpose of this exercise was thus to determine whether ICT competence is facilitated and not how it is facilitated.

This directed content analysis is summarized below according to the different categories of universities as identified above.

#### *Comprehensive universities*

A comprehensive university is an institution of higher education that provides a combination of the programmes offered by the former technikons (now universities of technology) and traditional universities (UNISA–HEQC, 2008: 3). All six comprehensive universities in South Africa offer Public Administration as a subject. Only three of them have been shown to include modules related to ICT competence in their undergraduate Public Administration curricula (Table 1).

**Table 1.** Comprehensive universities including ICT modules in their undergraduate Public Administration curricula

University	Qualification	Course/module	Reference
Nelson Mandela Metropolitan University (NMMU)	National Diploma: Public Management Not part of the degree programme	Public Information Service I Public Information Practices II Management of Information III	NMMU (Nelson Mandela Metropolitan University), Department of Political and Governmental Studies (2010)
University of Johannesburg (UJ)	Not part of degree programme	Not applicable	UJ (University of Johannesburg), Faculty of Humanities Regulations for Undergraduate Degrees and Diplomas (2009: 58–60)
University of South Africa (UNISA)	National Diploma: Public Management Not part of the degree programme	Public Information Service I Public Information Practices II Management of Information III.	UNISA Calendar Part 2, Subjects and Syllabuses (2010: 127–128) UNISA Calendar Part 4, College of Economic and Management Sciences (2010: 76–77)
University of Venda (UV)	Not part of degree programme	Not applicable	UV (University of Venda), Department of Public and Development Administration Email received from the Head of Department (2010)
University of Zululand (UZ)	Not part of degree programme	Not applicable	(UZ) University of Zululand, Department of Political Science and Public Administration (2010)
Walter Sisulu University (WSU)	Technology forms part of the National Diploma: Public Management, but not of the degree programme	Public Information Service I Public Information Systems II Management of Information III	WSU (Walter Sisulu University), Faculty of Business, Management Sciences and Law Prospectus (2010: 71–80)

It is evident from Table 1 that modules related to ICT competence are only included in the curricula of the National Diploma in Public Management, and not in any of the degree programmes offered by comprehensive universities. These modules are Public Information Service I, Public Information Practices II and Management of Information III.

### *Traditional universities*

Ten of the 11 so-called traditional universities in South Africa offer Public Administration as a subject. These universities offer the subject as part of various degree programmes, such as the *Baccalaureus Artrium* (BA), *Baccalaureus Administrationis* (BAdmin) or *Baccalaureate Commercii* (BCom). An analysis of their calendars at the time of the research showed that their undergraduate Public Administration curricula did not include the facilitating of any ICT competence as a separate module.

### *Universities of technology*

Universities of technology (the former technikons) were created in South Africa during the restructuring (merger) of higher education institutions that took place in 2004. These universities are similar to institutions in countries such as Germany, Hungary, Australia, the United States of America and Iran, created primarily to prepare students for a specific vocation or industry through the promotion, practice and transfer of technology (Committee of Technikon Principals, 2004: 18–25; Wessels, 2007: 535). Of the five universities of technology in South Africa, four offer Public Administration as a subject (see Table 2).

These four universities of technology offer Public Administration only at undergraduate level as part of the National Diploma in Public Management. The Public Administration curricula of all four institutions have been shown to include modules related to ICT competence.

### *An assessment of the modules related to ICT competence*

The directed qualitative content analysis of the modules related to ICT competence has shown that these modules do provide undergraduate students with a number of information technology skills needed to be successful in the public service. Of the 11 information technology skills required by Northrop (1999), the Organization for Economic Cooperation and Development (2002, 2007), Techlearning.com (2009) and Evalutech (2009), only six (end-user skills, data information management skills, e-mail/communication tools, Internet skills, information technical skills and information society skills) are included in the three Public Administration modules for students. These modules do not make provision for ICT skills related to spreadsheets, problem-solving, graphic presentation, Graphic Information Systems (GIS), and acquisition.

The above analysis of undergraduate Public Administration curricula of the comprehensive universities, traditional universities and universities of technology has shown that only those universities offering a National Diploma in Public Management have included ICT competence as separate modules in their curricula. The assessment has also identified a need for improvement in the content of those curricula. Consequently, while these universities offer only degree programmes,

**Table 2.** Universities of technology including information technology modules in their undergraduate Public Administration curricula

University	Qualification	Course/module	Reference
Central University of Technology (CUT)	National Diploma: Public Management	Public Information Service I Public Information Practices II Management of Information III	CUT (Central University of Technology), School of Government Management (2010)
Cape Peninsula University of Technology (CPUT)	National Diploma: Public Management	Public Information Service I Public Information Practices II Management of Information III	CPUT (Cape Peninsula University of Technology), Public Management (2010)
Durban Institute of Technology (DIT)	National Diploma: Public Management	Public Information Service I Public Information Practices II Management of Information III	DIT (Durban Institute of Technology), Department of Public Management and Economics (2010)
Tshwane University of Technology (TUT)	National Diploma: Public Management	Public Information Service I Public Information Practices II Management of Information III	TUT (Tshwane University of Technology), Department of Public Management (2010)

no traditional universities include modules on ICT in their Public Administration curricula.

## Conclusion

Considering the expectations globally that governments should provide advanced technology-enabled public services to their citizens, and the belief that institutions of higher education should provide scientifically inspired career education to public servants responsible for rendering those public services, this article reported on research determining whether undergraduate Public Administration curricula at South African universities should provide ICT competence training for their students.

Following a review of scholarship on curriculum development, two requirements for curricula for vocational and professional education have been identified for the purpose of this research, namely contextual relevance and professional relevance.

The implication of these requirements is that the specific context and vocational and professional requirements applicable to public servants should be taken into account to determine whether undergraduate Public Administration curricula should provide for ICT competence.

The context of public servants has been shown to consist mainly of the so-called 'knowledge economy' expected from public servants to provide citizens and their governments with accurate, complete, understandable and authentic information, and to render public services through the application of ICTs. This context requires public servants to be competent in the skilful utilization of these technologies.

With regard to the vocational and professional relevance of Public Administration curricula, it is noteworthy that IASIA, the international body setting standards for education in Public Administration, as well as the research carried out by various scholars regard ICT competence as an imperative for supporting nearly all the professional competencies expected from public servants. It has thus been shown that the context in which public servants work as well as their required vocational and professional characteristics support the expectation that the acquisition of ICT competence be included in the undergraduate Public Administration curricula at South African universities.

A directed qualitative content analysis of the undergraduate Public Administration curricula of the different categories of South African universities (comprehensive, traditional and universities of technology) has shown that no traditional universities include information technology in their Public Administration curricula as only those universities offering a National Diploma in Public Management (the universities of technology and the comprehensive universities) provide for the instilling of ICT competence through a separate module. The inclusion of this competence in the diploma curriculum affirms the intended vocational nature of diploma curricula. However, bearing in mind that the degree courses in Public Administration have also been shown to have a professional and vocational nature, one would thus expect these curricula to be influenced by the same contextual and professional requirements as diploma programmes. Although it may be argued that degree programmes consist of modules from various subject fields, and that some of these modules may be aimed at the facilitation of ICT competence, the specific public service context and professional requirements will not necessarily be reflected by a generic module.

This article contributes to the limited literature on Public Administration curriculum development by using the requirements of contextual relevance and professional and vocational requirements as decisive criteria for considering the content of Public Administration curricula. By applying these requirements to Public Administration, this article confirms that ICT competence should indeed be included in undergraduate Public Administration curricula. Considering the absence of any module facilitating ICT competence as part of undergraduate Public Administration curricula of degree programmes, this article has shown that the inclusion of ICT competence in the undergraduate curricula of degree programmes is imperative due to the need for contextual relevance, and the

specific professional and vocational requirements of the public service. It is thus suggested that institutions of higher education, specifically in South Africa, assess their undergraduate Public Administration curricula by applying these curriculum requirements.

## References

- Awortwi N (2010) Building new competencies for government administrators and managers in an era of public sector reforms: The case of Mozambique. *International Review of Administrative Sciences* 76: 723–748.
- Brinkerhoff J and Brinkerhoff D (2006) Preparing people for international public service in a changed world: The continued relevance of the MPA. *PA Times International Supplement* March: 6–7.
- Brown MM and Brudney JL (1998) Public sector information technology initiatives: Implications for programs of public administration. *Administration & Society* 30(4): 421–442.
- Cepiku D (2011) Public administration PhD programmes in Italy: Comparing different disciplinary approaches. *International Review of Administrative Sciences* 77: 379–396.
- CHE (Council on Higher Education) (2009) Available at: <http://www.che.ac.za> (accessed 3 April 2009).
- Chetty Y (2012) Graduateness and employability within the higher education environment: A focused review of the literature. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduateness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- Chris Hani District Municipality (2010) Sustaining growth through our people: Blog. Available at: <http://www.chrishanidm.gov.za/admin.panel/blog.asp> (accessed 1 May 2010).
- Coetzee M (2012) A framework for developing student graduateness and employability in the economic and management sciences at the University of South Africa. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduateness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- Committee of Technikon Principals (2004) *Universities of Technology in South Africa: Position, Role and Function*. Vaal University Press.
- CPUT (Cape Peninsula University of Technology) (2010) Public Management. Available at: [http://info.cput.ac.za/prospectus\\_3/qual\\_new.php?q=93&f=1](http://info.cput.ac.za/prospectus_3/qual_new.php?q=93&f=1) (accessed 3 March 2010).
- CUT (Central University of Technology) (2010) School of Government Management. Available at: <http://www.cut.ac.za/web/academics/faculties/man/sgm/homepage> (accessed on 3 March 2010).
- Department of Education (1997) *A Programme for Higher Education Transformation*. Pretoria: Government Publishers.
- Department of Higher Education and Training (2012) *Annual Performance Plan 2012–2013*. Republic of South Africa. Available at: <http://www.dhet.gov.za> (accessed 5 November 2013).
- DIT (Durban Institute of Technology) (2010) Department of Public Management and Economics. Available at: <http://www.dut.ac.za/pages/22618> (accessed 3 March 2010).
- DPSA (Department of Public Service and Administration) (2001) *Public Service Regulations, (2001) as amended 31 July 2012*. Available at: [http://www.dpsa.gov.za/dpsa2g/documents/acts&regulations/regulations1999/PSRegulations\\_13\\_07\\_2012.pdf](http://www.dpsa.gov.za/dpsa2g/documents/acts&regulations/regulations1999/PSRegulations_13_07_2012.pdf) (accessed 19 September 2012).

- DPSA (Department of Public Service and Administration) (2005) *Public Service Middle Management Competency Framework*. Available at: <http://www.dpsa.gov.za/dpsa2g/documents/ep/2006/MMCF.pdf> (accessed 19 September 2012).
- DPSA (Department of Public Service and Administration) (2009) *Public Management and Political Studies at Tertiary Education Institutions in South Africa*. Available at: <http://www.dpsa.gov.za/links.asp> (accessed 8 June 2009).
- DTI (Department of Trade and Industry) (2009a) Available at: [www.thedti.gov.za](http://www.thedti.gov.za) (accessed on 2 December 2009).
- DTI (2009b) *South African ICT Sector Development Framework*. Available at: [www.thedti.gov.za/saitis/docs/html/chap03.html](http://www.thedti.gov.za/saitis/docs/html/chap03.html) (accessed 2 December 2009).
- DTI (2009c) The DTI B-BBEE Website. Available at: <http://196.31.61.237/17htm> (accessed 2 December 2009).
- Economic Commission for Africa (2003) *Public Sector Management Reforms in Africa*. Online available at: [www.uneca.org/publications/dpmd/public\\_sector\\_mangt.pdf](http://www.uneca.org/publications/dpmd/public_sector_mangt.pdf) (accessed 2 December 2009).
- e-Government Toolkit (2009) *Identifying Benefits*. Available at: <http://www.egpv.onfodev.org/en/Section.173.html> (accessed 2 December 2009).
- Evalutech (2009) *What are 21st Century Skills?* Available at: [www.evalutech.sreb.org/21stcentury/whatare.asp](http://www.evalutech.sreb.org/21stcentury/whatare.asp) (accessed 2 December 2009).
- Farello M and Morris C (2006) *The Status of E-government in South Africa*. Available at: [http://www.researchspace.csir.co.za/dspace/bitstream/.../1/Farello\\_2006\\_D.pdf](http://www.researchspace.csir.co.za/dspace/bitstream/.../1/Farello_2006_D.pdf) (accessed 1 May 2010).
- Greenwood J and Robins L (1998) Public administration curriculum development in Britain: Outsider or insider influence? *International Review of Administrative Sciences* 64: 409–421.
- Greisler DS (2008) Positioning public administration curriculum to add value: The case for 'transferrable skills'. *International Journal of Organization Theory and Behavior* 11(4): 518–535.
- Hager P and Butler J (1996) Two models of educational assessment. *Assessment and Evaluation in Higher Education* 21(4): 367–378.
- Holtzhausen N (2012) Graduateness in the design of a curriculum in an Open Distance Learning environment. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduateness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- Hsieh HF and Shannon SE (2005) Three approaches to qualitative content analysis. *Qualitative Health Research* 15(9): 1277–1288.
- IASIA (International Association of Schools and Institutes of Administration) (2009) Available at: <http://www.iiasia.be/schools/aequestc.htm> (accessed 6 May 2009).
- ITAA (Information Technology Association of America) (2007) Available at: <http://www.ita.org> (accessed 30 September 2007).
- Lodge G and Kalitowski S (2009) Lost in translation? International perspectives on civil service reform. In: Mather RR (ed.) *Glimpses of Civil Service Reform*. Hyderabad: ICFAI University Press.
- Makhanya M (2012) Student graduateness. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduateness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- Mischke G (2010) Towards effective curriculum design in ODL. *Progressio* 32(2): 145–163.

- Nam T (2012) Citizens' attitudes toward open government and government 2.0. *International Review of Administrative Sciences* 78: 346–368.
- NMMU (Nelson Mandela Metropolitan University) (2010) Department of Political and Governmental Studies. Available at: <http://www.nmmu.ac.za/documents/arts/2010%20Arts%20Prospectus.pdf> (accessed 4 March 2010).
- Northrop A (1999) The challenge of teaching information technology in public administration graduate programmes. In: Garson GD (ed.) *Information Technology and Computer Applications in Public Administration: Issues and Trends*. Hershey, PA and London: IDEA Group Publishing, pp. 7–22.
- Nöthling M, Goodwin-Davey A and Van Rensburg E (2009) How do you design a curriculum framework for a programme or a module? Focus 3 of the dynamics of educational transactions in an ODL context: What every academic should know about ODL at UNISA (unpublished documents as part of induction for new academic staff). Directorate, Curriculum and Learning Development. Pretoria: University of South Africa.
- NQF (National Qualifications Framework) (2009) Available at: [http://www.nqf.org.za/html/ext/nqf\\_overview04.htm](http://www.nqf.org.za/html/ext/nqf_overview04.htm) (accessed 3 July 2009).
- Organization for Economic Cooperation and Development (OECD) (2002) *Measuring the Information Economy: ICT in Education and Government*. Available at: [www.ingentaconnect.com/content/.../2002/00002002/.../9202151ec006](http://www.ingentaconnect.com/content/.../2002/00002002/.../9202151ec006) (accessed 2 December 2009).
- Organization for Economic Cooperation and Development (OECD) (2007) *UNU: Human Capacity Development for e-Government*. Available at: [www.iist.unu.edu/newrh/III/1/docs/techreports/report362.pdf](http://www.iist.unu.edu/newrh/III/1/docs/techreports/report362.pdf) (accessed 2 December 2009).
- Pauw JC (1995) Wat is die Verskynsel Publieke Administrasie en Wat moet 'n Student aan die Universiteit in die Vak met Dieselfde naam leer? *SAIPA Journal of Public Administration* 30(1): 28–52.
- PayCity (2013) Welcome to payCity. Available at: <https://www.paycity.co.za/Default.aspx> (accessed 15 March 2013).
- Peninsula Technikon (2006) Available at: <http://www.pentech.ac.za/facbusiness/ndpublicmanagement.asp> (accessed 1 June 2006).
- Plano Clark VL and Creswell JW (2010) *Understanding Research: A Consumer's Guide*. Boston, MA: Pearson.
- Prinsloo P (2012) Graduateness as counter-narrative: Gazing back at Medusa. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduateness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- Rosenbaum A (2007) Enhancing the quality of education and training for the public service. In: IASIA *Excellence and Leadership in the Public Sector: The Role of Education and Training*. NISPAcee, Slovakia, 11–24.
- SAQA (South African Qualifications Authority) (2003) *Unit Standards for Public Administration and Management*. Available at: <http://www.saqa.org.za/show.asp?include=docs/legislation/notice/2003/publicadmin.htm> (accessed 6 June 2003).
- SAQA (South African Qualifications Authority) (2009) Available at: <http://www.saqa.org.za/about/about.htm> (accessed 7 May 2009).
- SARS (2013) E-filing of tax. Online available at: <http://www.sarsefiling.co.za/> (accessed 15 March 2013).

- Shim DC and Eom TE (2009) Anticorruption effects of information communication and technology (ICT) and social capital. *International Review of Administrative Sciences* 75: 99–116.
- South Africa (2001) Public Service Regulations, 2001. Government Notice No. 1 of 5 January 2001. As amended. Available at: [http://www1.chr.up.ac.za/undp/domestic/docs/SouthAfrica\\_LP20.pdf](http://www1.chr.up.ac.za/undp/domestic/docs/SouthAfrica_LP20.pdf) (accessed on 11 July 2013).
- Techlearning.com (2009) *21st Century Skills*. Available at: [www.techlearning.com/article/13832](http://www.techlearning.com/article/13832) (accessed on 2 December 2009).
- Termini V, Mattarella BG and Pizzicannella S (2011) *IASIA faces the 21st century. Public Administration in a global context: IASIA at 50*. Brussels: Bruylant.
- TUT (Tshwane University of Technology) (2010) Department of Public Management. Available at: <http://www.tut.ac.za/.../facultiesdepartments/.../departments/.../Public%20Management.pdf> (accessed 3 March 2010).
- Ungerer L (2012) The contribution of e-education in enhancing graduateness in an open distance learning environment. In: Coetzee M, Botha J, Eccles N, Holtzhausen N and Nienaber H (eds) *Developing Student Graduatness and Employability: Issues, Provocations, Theory and Practical Guidelines*. Randburg: Knowres Publishing.
- UNISA (University of South Africa) (2010) *UNISA Curriculum Policy*. Pretoria: University of South Africa.
- UNISA–HEQC (2008) *Self-evaluation Portfolio for the HEQC Institutional Audit*. Pretoria: UNISA.
- University of Johannesburg (2009) *Faculty of Humanities Regulations for Undergraduate Degrees and Diplomas*. University of Johannesburg.
- University of Venda (2010) Department of Public and Development Administration. Head of department: Jaco Vermaak. Emailed 3 March 2010 at [Jaco.Vermaak@univen.ac.za](mailto:Jaco.Vermaak@univen.ac.za)
- University of Zululand (2010) Department of Political Science and Public Administration. Available at: [http://www.uzulu.ac.za/com\\_dpt\\_pspa.php](http://www.uzulu.ac.za/com_dpt_pspa.php) (accessed 24 February 2010).
- Walter Sisulu University (2010) *Faculty of Business, Management Sciences and Law Prospectus*. Walter Sisulu University.
- Wessels K (2007) Public Administration at a comprehensive university. *Tydskrif vir Geesteswetenskappe* 47(4): 531–542.
- Wessels JS (2012) A core curriculum for Master of Public Administration (MPA) qualification: Some considerations for a developmental state. *Administratio Publica* 20(2): 157–175.
- Wilken M (1996) *Initial Teacher Training: The Dialogue of Ideology and Culture*. London: Falmer Press.
- Wooldridge B (2004) Preparing public administrators for an era of globalization and decentralization: A strategic approach. *International Review of Administrative Sciences* 70(2): 385–409.

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