

SERVICE LEARNING: PREPARING A NEW GENERATION OF SCIENTISTS FOR A MODE 2 SOCIETY

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ABSTRACT

Preparing students to become full participants, as future scientists and professional practitioners, in what Michael Gibbons (2006) refers to as a Mode 2 society, is a challenge that South African higher education institutions are currently taking up. An increasing number of these institutions consider the community-based experiential pedagogy of service learning as a valuable form of community engagement which actively involves not only staff and students, but also external partners in the public space, or *agora*, where knowledge production is negotiated in a myriad of transaction spaces by a wide variety of stakeholders. In this article, I will argue that Gibbons' notion of engagement as a core value in a Mode 2 society could serve as a theoretical and metaphoric framework that adds to the understanding of how service-learning modules create transaction spaces, where students and community members are encouraged to be knowledge workers at the point of intersection of institutional and disciplinary boundaries. Examples from the field will be utilised to illustrate how the service-learning approach allows for the contextualisation of both community and curriculum development, enhancing students' understanding of their social responsibility and encouraging them to join the body of scientists and other practitioners who are taking up the challenge to produce the socially robust knowledge that a Mode 2 society demands.

Key words: Community engagement, service learning, Mode 2 society, contextualisation, transaction spaces, socially robust knowledge.

1. INTRODUCTION

When considering the immense challenges that the world is currently facing, one wonders how institutions of higher education could best equip a new generation of scientists and other professional practitioners with the competencies (i.e. knowledge, skills, attitudes) and values required to contribute constructively to a rapidly changing global environment. In fact, there is evidence of a deep suspicion on the part of society that scientific knowledge is often utilised without a sufficient understanding of how the natural environment and the lives of stakeholders are affected, especially those with much less discursive power than "triple-helix" participants (i.e. government, industry, business). In this regard, the words of the poet Wendell Berry (1987, cited by Bruzas 2004: 6-7) still ring ominously true today: While pointing out that, ideally, "(t)he thing being made in a university is humanity", he suggests that what universities do, in fact, produce is "a powerful class of itinerant professional vandals", with many graduates joining the "upwardly mobile" professional force "exploiting and destroying local communities, both local and natural, all over the country". If this is true of the USA, is the situation any different as far as South African graduates are concerned□

In this article I shall argue that South African higher education institutions, in particular, could find fruitful ways of dealing with the above dilemmas within the transformative space created by the renewed emphasis on the notion of “community engagement”, and more specifically, the experiential pedagogy of community-based service learning. My understanding of the intriguing, persuasive set of metaphors that Michael Gibbons (2005 and 2006) uses to argue for the emergence of a new social contract between science and society, requiring that engagement should become a core value of higher education within a “Mode 2 society”, will serve as a theoretical framework for this limited inquiry into the contribution that service learning can make towards changing the way in which higher education institutions perceive and act out their roles in society. Particular attention will be given to the following characteristics of a Mode 2 society: (1) the contextualisation of curricula through service learning, (2) the development of social responsibility in students through the production of socially robust knowledge, and (3) specific ways in which service learning can be used to prepare students to participate in the *agora*, thus better equipping them with the requisite competencies to take up their future places in society. Examples from the field, obtained from a review of recent South African studies, literature and other empirical data, will serve as illustrations of what this means in practice.

2. MICHAEL GIBBONS ON THE MODE 2 SOCIETY

During his appearance as a keynote speaker at the Conference on Community Engagement in Higher Education¹ that was held in Cape Town in 2006 (3 - 5 September), Gibbons alluded to the need for a “new” social contract between science and society. “That universities should serve the public good has been at the core of the social contract with society and the universities since their inception, though it has been reformulated many times to reflect changing social circumstances” (Gibbons 2006: 23-24). The most recent societal changes have tended towards the emergence of what Gibbons refers to as the Mode 2 society, which is a response to the growing complexity of problems and issues that need to be addressed, as well as to the increasing uncertainty in respect thereof. This collective “Mode 2” response contributes, in its turn, to the blurring, infringement and permeability of traditional boundaries between the various institutions of society – the State, Market, Industry, Culture and Science. With these observations, Gibbons takes the arguments of the groundbreaking work, *The new production of knowledge: The dynamics of science and research in contemporary societies* (Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994), into a new philosophical and epistemological paradigm.

In his address, Gibbons took research as the point of departure to illustrate how higher education institutions need to rethink their role in a Mode 2 society with (1) its *agora* (i.e. public space or market place), consisting of a myriad “transaction spaces” for joint production of knowledge at increasingly permeable institutional boundaries; (2) its demand for the “contextualisation” of scientific knowledge to be

¹ This momentous conference in the history of South Africa, in which executive-level representatives of higher education institutions, community formations, government and the business sector participated, was jointly presented by the Higher Education Quality Committee (HEQC) of the Commission on Higher Education (CHE) and the Community – Higher Education – Service Partnerships (CHESP) initiative of JET Education Services.

effected by an emancipated society able to “speak back” to science; and (3) its requirement that universities should participate in the production of “socially robust knowledge”. His conclusion is that within a Mode 2 society, it is crucial that higher education should embrace community engagement as a core value – a factor that will increasingly become manifest in institutional practice; for example, in the form of a purposeful movement beyond mere “linkages” with society to “patterns of communicative interaction” for a fuller integration of the core function of research with community engagement as a core value.

My contention is that what is valid for higher education research is also applicable to the core functions of teaching and learning. The urge towards the transformation of higher education in South Africa has not only impacted on the quest for greater responsiveness in research, but also on the endeavour to develop a sense of social responsibility in students. The question is: To what extent are higher education institutions geared towards preparing students, as future scientists and professional practitioners, to participate in transaction spaces and open systems of knowledge production in the Mode 2 society that should develop within the South African context□

In South Africa, a philosophical and epistemological shift has taken place from the traditional, rather vaguely-defined notion of “community service” towards a conceptualisation of community engagement that emphasises integration with academic work. In the definition provided in the Glossary of the Higher Education Quality Committee's *Framework for Institutional Audits* (June 2004: 15), the link with teaching and research is made explicit in the description of community engagement as:

Initiatives and processes through which the **expertise** of the higher education institution in the areas of teaching and research is applied to **address issues relevant to its community**. Community engagement typically finds expression in a variety of forms, ranging from informal and relatively unstructured activities to formal and structured academic programmes addressed at particular community needs (**service learning programmes**). (Emphasis by the author)

As has been stated above, the focus of this article is on the community-based pedagogy of service learning, with practical examples of how the participatory application context created by this pedagogy could shape knowledge-generation in order to make it more relevant and responsive. The proposition is that for “expertise” to be “applied to address issues relevant to [the higher education institution's] community”, as stipulated in the definition cited above, higher education institutions need to ensure that engagement becomes increasingly manifest as a core value defining the way in which they go about their business. I shall further argue that the firm establishment of community engagement as a core value, specifically through the introduction of community-based service learning as a component of learning programmes, is a sound investment towards the delivery of a more socially responsible student “product”.

3. SERVICE LEARNING FOR A MODE 2 SOCIETY

As has been argued above, the present era requires a future generation of scientists and professional practitioners who will know, understand and be able to participate in the public spaces where socially robust knowledge can be produced in collaboration with triple-helix and community partners.

One of the challenges facing higher education (i.e. staff and students) in South Africa is that of finding a balance between the requirement to be competitive within a globalised knowledge society on the one hand, and the even more urgent call of government for the transformation of higher education with a view to broadening democratic participation, responsiveness to societal challenges and partnership-building, on the other hand (cf. DoE 1997). Whereas the notion of community engagement could be regarded as a catalyst for such transformation, service learning is considered as a vehicle for embedding community engagement in academic work through teaching and learning.

In recent years there has been increasing support in certain quarters of the South African higher education sector for the pedagogy of service learning as a valuable form of community engagement which involves the active participation of higher education staff, students and a variety of stakeholders in society. The growing support largely came about as a result of the national CHESP initiative of the Joint Education Trust (which later became the JET Education Services section of the Trust).² The strong links of CHESP to donor organisations and higher education institutions of the USA naturally resulted in the introduction into the South African agenda of service learning (also referred to in the USA as "academic service learning" or "Service-Learning") as a well-established mechanism for integrating service with the learning programmes of students in the USA as a preferred form of what they refer to as "civic engagement".

According to Bringle and Hatcher (2005: 27), service learning is regarded by the American Association of Colleges and Universities as a powerful pedagogy "because it brings a civic dimension to teaching academic material, contributes to a civic purpose for institutions of higher education, and fosters a civic dialogue between institutions and their communities". In the oft-cited definition of Bringle and Hatcher (1995: 112), service learning is described as a "course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility".³ In addition to the above, the University of the Free State deliberately chose to add to its own definition of service learning the following special emphasis on the nature and purpose of the partnership context:

² The Community – Higher Education – Service Partnerships (CHESP) initiative was launched in 1999 in partnership with the Ford Foundation and the WK Kellogg Foundation (cf. <<http://www.chesp.org.za>>).

³ Over the past decade or so, a large amount of service learning material has been produced in the USA, much of which can be accessed via the Campus Compact website (<<http://www.compact.org>>).

[Community service learning] requires a collaborative partnership context that enhances mutual, reciprocal teaching and learning among all members of the partnership (lecturers and students, members of the communities and representatives of the service sector).⁴

It would not serve the purposes of this article to embark on a detailed typology of the forms of community engagement that are found in South African higher education (cf. HEQC/JET, 2006: 13-15 for a typology of student engagement). Suffice it to say that, although the value of extra-curricular, volunteer community service is acknowledged, the main emphasis here is on academically integrated forms of engagement, such as community-based research and service learning. In addition, technikons and universities of technology have brought work-integrated learning (WIL)⁵ to the table. One of the key questions often asked is: Who is the "community" in community engagement? Could the term be understood broadly enough to include the "business community" and industry involved in WIL?

In response to the above question, the main argument is that the intention behind the inclusion of community engagement in DoE and HEQC documents was to direct HE efforts towards addressing the most pressing challenges faced by South African society. Thus, in a Mode 2 society, it should not be necessary to define the communities that higher education institutions engage with, as being "previously" or "presently disadvantaged", "marginalised", "under-served" or "under-served", because if cooperative partnerships with local and regional stakeholders are established as transaction spaces where the production of knowledge that would serve the "public / common good" is negotiated, the most pressing issues to be addressed will arise naturally and organically through dialogue and deliberations.

The contention is that service learning, as a well-considered form of curriculum-based community engagement, could contribute – albeit in a small way – to changing the DNA of society, as it were – *inter alia*, by linking triple-helix partners with communities within complex networks based on triad partnerships, i.e. between higher education, the service sector in its many guises, and community groupings or constituencies. The following section will focus on the potential of service learning modules as vehicles for the contextualisation of curricula.

4. CONTEXTUALISING THE CURRICULUM: SOCIETY SPEAKS BACK THROUGH SERVICE LEARNING

For Gibbons (2006: 7-8), the term "contextualisation" describes the process through which knowledge is contextualised as a result of the reverse communication that takes place when society speaks back to science. In the South African development context this would mean that communities are emancipated and that they therefore insist on entering the knowledge society on their own terms, as Bawa (2003: 50) puts it. As a result of the changing relationship between science and society, and as the transformation thrust within the higher education sector intensifies, science is being drawn into a larger and larger number of

⁴ Cf. the UFS Community Service Policy document (UFS online 2006) for the definition of CSL.

⁵ Also referred to as experiential learning, co-operative education or work-based learning in South Africa.

problem areas, many of which lie outside of the traditional disciplinary boundaries. According to Gibbons (2006: 6), this is the root of the growing complexity and “the pervasive uncertainty that confronts science as well as the institutions and individuals that want to engage with it”. In response to this uncertainty, inter-institutional co-operation is employed as a coping strategy within open, exploratory systems that Gibbons (2006: 7) refers to as networks.

Within the context of community engagement, the increasing permeability of boundaries enables communities to speak back to higher education institutions. In this way, community constituencies are also transforming science by demanding innovation in a variety of ways, including the adoption of philosophical and epistemological approaches that are more inclusive and participatory. Through its insistence on reciprocity and mutuality, service learning promotes such contextualisation, and more specifically, contextualisation of the curriculum, since it requires the creation of transaction spaces where constructive dialogue can take place in order to negotiate a shared vision for each module, as well as the particular outcomes to be achieved per constituency. Service learning endorses the notion that all participants should have a full say in defining the outcomes of the engagement, thus providing an enabling environment for both curriculum and community development to take place within more open, collaborative and reciprocal systems of knowledge generation. In addition, the outcomes-based, more student-centred and community-oriented approaches encouraged by the service learning ethos are geared towards better preparing students to take up their social responsibilities in a Mode 2 society.⁶

In the South African context, service learning more often requires a triad partnership than would be the case in a developed country, since the mediating role of the service sector⁷ (public and private) becomes crucial in cases where well-established community-based organisations are lacking. Direct partnerships with vaguely defined “community” groupings are often susceptible to insurmountable power imbalances, unrealistic expectations, a lack of inclusive representation, as well as various political tensions. In South Africa, however, the service sector, more often than not, also suffers from what is broadly referred to as a “lack of capacity”, which may imply, *inter alia*, being under-staffed; not having the required expertise among staff members; and being so caught up in internal power struggles that little enthusiasm remains for providing services to society. Through service-learning placements, students gain first-hand experience of these realities and are afforded an opportunity to develop resilience, problem-solving skills and a deeper understanding of their future roles as professional practitioners.

Some universities have elected to structure their community engagement efforts by participating in the development of what the University of the Free State (UFS) refers to as “key sites for multi-disciplinary engagement”⁸. One example is the Khula Xhariep Partnership (cf KXP online), a partnership formation between the

⁶ The words of caution offered by McMillan (2002), who theorises about perceptions regarding the sacred and the profane in terms of knowledge “reproduction” processes in a service-learning curriculum, should be heeded in this regard.

⁷ Cf. Bruzas 2004 for a heuristic inquiry into the role of the service sector in service learning.

⁸ Cf. the UFS Community Service Policy document (UFS online 2006).

UFS and various stakeholders. Representatives of these stakeholders are elected by small-town and rural communities of the Xhariep District Municipality in the Southern Free State. As a transaction space, KXP encourages community participants to contribute as full partners towards the achievement of jointly-identified goals, creating “patterns of communicative interaction” (Gibbons 2006: 2) that explicitly allow for “speaking back” within a long-term collaborative engagement.

One of the several community-based education initiatives that are hosted by, and facilitated through KXP is embedded within the Assuring Health for All (AHA) research project⁹ of the Department of Nutrition and Dietetics (UFS), in collaboration with a number of other UFS departments. During the first semester of 2007, students participated in the project through the practical application of a third-year Nutrition and Dietetics module in research methodology. During the first phase of the project, students and staff collected data from the communities of Philippolis, Springfontein and Trompsburg, the results of which will inform both the service-provision strategies of provincial and local government, and the follow-up service-learning activities of UFS students. During a group discussion and reflection session, students reported considerable personal growth, as well as a deeper understanding of their civic responsibility as future professionals. They also indicated that this experience had helped to prepare them to work in a rural environment with its distinctive dynamics.

During their service-learning experiences, students who are enrolled in the UFS Master’s Programme in Pastoral Therapy are afforded the opportunity to apply theoretical knowledge, within the ethos of a “doing theology” that is advocated by the Faculty of Theology. These students engage with inmates of a private maximum-security correctional facility, utilising the principles of narrative theory, in order to jointly (re-)construct the life stories of inmates (who in this way are given an opportunity to find their voices and to “speak back”), in an effort to help them to find meaning that could lead to a future of healing and hope. According to Van den Berg (2006), the Participatory Action Research approach that is followed in this regard not only leads to the formation of new, meaningful identities, but also to unique opportunities for enriched learning through service. He concludes that service learning contributes to the development of a theology that has life-changing potential for the “market place(s)” of the lives of individuals and communities (Van den Berg, 2006: 15).

At this stage of the renewed focus on higher-education engagement, it may be assumed that there might not yet be a sufficient number of meaningful opportunities for reverse communication or “speaking back” by society. Recent investigations have shown that patterns of communicative interaction between higher-education institutions and external partners often still lack robustness. Research by Laattoe (2007) on community partners’ experiences of a community-based course offered by fourth-year medical students at the University of Cape Town (UCT) afforded these partners an opportunity to express a need for more

⁹ This is a research project funded by the National Research Foundation, to be conducted and implemented over a 12-year period.

committed, sustained involvement by UCT staff members. These external participants also suggested that the University should adopt a more holistic approach to its engagement with them by involving more disciplines, in accordance with the demands of the situation. Whether the relevant UCT authorities will heed these calls remains to be seen. In similar vein, Mitchell and Rautenbach (2005) question service learning by “problematising” service-learning partnerships in the South African context. Focusing on a case study from the University of KwaZulu-Natal, they show how the impact of service-learning courses is often restricted by the *ad hoc*, superficial nature of the “partnerships” involved.

Generalisations regarding the quality of service-learning partnerships are, however, not called for; and each case should be evaluated in terms of its own goals and merits, preferably by its participants. Thus, Seale, Wilkinson and Erasmus (2005) provide an example of how action research was utilised to establish a firm participatory basis for negotiating satisfactory benefits for all involved in a service-learning course for first-year nursing students at the UFS. It is clear that there is much scope for similar participatory research initiatives focusing on the nexus between teaching, learning, research and community engagement that would at the same time strengthen this nexus as a transaction space for the joint production of knowledge. In addition, O'Brien (2005) argues for the grounding of service learning in the South African context, with a view to increasing the usefulness and reliability (i.e. social robustness, to use Gibbons' notion) of the knowledge that is produced jointly.

5. STUDENTS, SOCIAL RESPONSIBILITY AND SOCIALLY ROBUST KNOWLEDGE

As a rationale for including a service-learning component in the curricula of students, the objective stipulated in the following subsection of Education White Paper No. 3 (DoE July 1997) is often cited with reference to the transformation of higher education:

“To promote and develop social responsibility and awareness amongst students of the role of higher education in social and economic development through community service programmes” [1.27(8)]

An important aspect of social responsibility, is the commitment to participate in the production of knowledge that is aimed at addressing the most urgent challenges of society. As was argued in the previous section, contextualisation of the service-learning curriculum requires conditions that are conducive to the production of what Gibbons (2006: 8-11) refers to as “socially robust” knowledge (i.e. knowledge tested for reliability in a variety of application contexts). Thus, students who are afforded the opportunity to participate in knowledge-production within transaction spaces where such contextualisation takes place should be better prepared to take up the responsibility of becoming co-producers of reliable knowledge that serves the public good.

The development of a life-long learning orientation, together with various other life skills, is essential if new graduates are to be willing and able to respond

appropriately to the challenges meted out to them in the workplace. There is a dire need to prepare students for a rapidly-changing and globalised world (by enabling them to "think globally"), while at the same time ensuring that they develop the relevant competencies for "acting locally" in the highly uncertain, challenging environment of a developing country. A government response to this necessity can be found in the mandatory requirement that all qualifications should include, *inter alia*, the following Generic or Critical Cross-Field Outcomes (CCFOs): (1) the development of a macro-vision of the world as a set of related systems; (2) the identification and solving of problems; (3) the ability to work effectively in a team; (4) effective communication; (5) the effective and responsible use of technology; and (6) the development of cultural sensitivity across a range of social contexts¹⁰. An increasing number of higher-education institutions, as well as some professional bodies, have become convinced that these outcomes can best be facilitated through the real-world, authentic learning experiences that lecturers and students are confronted with through community engagement. One outstanding example is the mandatory community-based service-learning module, in the form of a community project, which students of the Faculty of Engineering¹¹ at the University of Pretoria offer as part of their training, as specifically required by the South African Council for Engineers.

A doctoral study has been conducted on a similar project-based service-learning course that has been introduced into the MBA programme at the University of the Witwatersrand for the purposes of developing generic competencies of students. Carmichael (2007), the lecturer and researcher responsible for this course, reports that several of the MBA students who enrolled for the course were able to see a connection between their service-learning experiences and potential corporate social investment (CSI) projects of the engineering firms and other companies in which they work as professionals. Even though students initially seemed to regard the persons whom they encountered at the community sites as "coming from another universe", as Carmichael puts it, their enthusiasm for and commitment to the projects indicated that they found a personal meaning in the work that went beyond their expectations of the course (and of themselves).

At the University of the Western Cape, fourth-year Pharmacology students work in collaboration with community pharmacists at primary health-care clinics. Included in this work-based training programme is a service-learning component, which requires these students to participate in the Patient Support Clubs at the clinics. Through their interaction with community members, students are able to gain first-hand knowledge of the perceptions of patients and the challenges that they face. This enables the students to respond more appropriately by providing additional information regarding medication and health matters. In addition to the fact that students get to test the applicability (or robustness) of the theoretical knowledge that they have acquired, they are placed in an experiential learning environment where they can develop a profound sense of empathy and understanding that goes beyond what can be taught in a lecture hall. A similar result can be reported regarding the outcomes of the service-learning module of third-year Accounting

¹⁰ Cf. the reference to the CCFOs in CHE (2002 online).

¹¹ Cf. the following website: <<http://www.up.ac.za/ebit/community>>.

students of the QwaQwa campus of the UFS. The Accounting lecturer, setting an excellent example for students, has established a mutually beneficial partnership with the Free State Development Corporation; and students are engaged in assisting with the development of accounting skills needed by small business owners in the area.

The above examples attest to the fact that South African students are ready and willing to take up their social responsibility and to commit themselves to the production of socially robust knowledge. Programme evaluation and systematic impact studies should now be conducted among (and by) alumni and other graduates, in order to investigate the longer-term effects of service learning on the subsequent involvement of graduates in the co-production of reliable knowledge that involves a wide variety of stakeholders from diverse constituencies.

6. A NEW GENERATION OF SCIENTISTS – PARTICIPATING IN THE SOUTH AFRICAN “AGORA”

According to Gibbons (2006: 11), the *agora* of the Mode 2 society refers collectively to the public space in which science meets the public to define societal and scientific problems and negotiate solutions. The implication is that higher-education institutions are now required to prepare a new generation of scientists and professional practitioners who know – from first-hand experience – their own strengths and ability to contribute, in collaboration with many others, to knowledge production in the *agora*. Service learning, as a proven form of citizenship education, provides a developmental space for students in which certain constant factors are present, such as values based on a shared humanity; respect for human dignity and diversity; consideration for environmental sustainability; responsiveness and responsibility; reciprocity and mutuality; relevance of scientific knowledge; reflective practice and participatory research.

In order to create the above-mentioned developmental space, service learning must be embedded in higher-education rules of engagement, as required by the *agora* of a Mode 2 society. National awareness of this fact is evident from, *inter alia*, statements made regarding the role of higher-education institutions. One key example is to be found on the website of the Council on Higher Education¹², which states that the central objective of the Council's Higher Education Quality Committee (HEQC) is to ensure that higher-education institutions "offer education, training, research and community engagement which are of high quality and which produce **socially useful and enriching knowledge** as well as a **relevant range of graduate skills and competencies** necessary for social and economic progress" (emphasis by the author). Such relevant skills and competencies can best be produced in an environment where students are recognised as knowledge workers at the boundaries of the various institutions and constituencies, who are constantly negotiating the social usefulness of the knowledge that is produced. Thus, a community-based pedagogy such as service learning increases the permeability of institutional boundaries through its emphasis on multidisciplinary, inter-institutional approaches to knowledge production. Through students' participation in service-

¹² Cf. <<http://www.che.ac.za>>.

learning sites as transactional spaces and trading zones where knowledge exchanges take place, the transformative educational model that Kiely (2005: 8) proposes for service learning comes into play.¹³

In reality, lecturers often find it difficult to fit in enough time and space in service-learning curriculum development to include contributions of the various external partners and students. Pretorius (2007) conducted an inquiry into attitudes and perceptions of students regarding their service-learning experiences at the Central University of Technology, Free State, in order to develop a higher-education programme management model for community service learning. The three attitudes that were discussed are “self-efficacy”, “obligingness” and “engagement”. The CHESP-supported service-learning modules that were investigated included Ceramic Arts, Human Resources Management, Sustainable Agriculture, Clothing and Dental Assisting. Noteworthy conclusions and recommendations regarding the management of student attitudes were made; for example, in respect of the importance of establishing trust among lecturers, students and external partners as a basis for ensuring optimal learning. Another significant finding of the study is that students need to be involved (i.e. as knowledge workers) in more aspects of the development of the service-learning modules, with a view to increasing their understanding of the various outcomes of the module and allowing them to share in the responsibility of achieving these outcomes.

Examples abound of community-based education in which students are able to contribute to knowledge production that is “socially useful” in spaces that they, or their lecturers, would normally not regard as being particularly relevant to their training. At Rhodes University¹⁴, Honours students of the Information Systems Department undertake projects in which they develop “unique and extremely useful” systems that are tailor-made for the requirements of non-governmental and community-based organisations such as the Umthathi Training Centre (Rhodes University, 2005/6: 32). Students in Dental Assisting at the Central University of Technology hone their skills by addressing the basic oral-hygiene skills and dental-care needs in the community, focusing specifically on educating parents and caretakers in disadvantaged areas, for example, at farm schools and schools for learners with special needs (Central University of Technology, 2005: 10-11).

Compelling evidence of successful participation in the South African *agora* is to be found in service-learning modules that focus on including local and indigenous knowledge in the training programmes. For example, at the QwaQwa campus of the University of the Free State, students in Parasitology and Plant Sciences work together in multidisciplinary teams, *inter alia* to investigate the scientific basis of the traditional use of the aloe plant in the prevention of tick-borne diseases among farm animals belonging to poorly-resourced farmers in the region. Moreover, for several years now, Botany students of the University of the Western Cape have been conducting research on herbal remedies in collaboration with traditional healers and other knowledgeable community members. During their service-

¹³ This process model consists of the following five categories that describe transformational education in service learning: contextual border crossing; dissonance; personalising; processing; and connecting.

¹⁴ Also cf. the following website: <www.ru.ac.za/community>.

learning engagements, students, as knowledge workers at the boundaries, experience and become aware of the need for the creation of a shared, locally understood language for the effective, reciprocal communication of both scientific and local knowledge, in order to coordinate action.

7. CONCLUSION

The above discussion has provided some evidence that service learning is a pedagogical approach that contributes to the preparation of students for a Mode 2 society. However, critical reflection on the radical philosophical and epistemological shift that is, in fact, required by the Mode 2 society, alerts one to the fact that service learning alone could not bring about such a profound change in higher education. With reference to the South African context within which service learning is taking root, Hay (2003: 190) points out that even though this pedagogy could undeniably provide an effective means towards the alleviation of the harsh realities of South African communities, as well as a powerful way to steer students and higher-education institutions in the direction of a greater responsiveness, it should not be viewed as "a panacea for the deep-rooted socio-economic and educational problems of communities". This observation resonates well with Butin's (2006: 474) argument that "there may be a fundamental and unbridgeable gap between the rhetoric and reality of the aspirations of the present-day service-learning movement".

The fact is that service learning can only play a significant role in shaping a new cadre of civil servants, as well as leaders in business and industry, if it is embedded in a higher-education sector that is willing to participate in the *agora* within a new social contract, as described in the above discussion. According to Brukardt, Holland, Percy and Zimpher (2006: 244), this will require radical institutional change and the forging of partnerships as the overarching framework for engagement. It is thus also obvious that the Mode 2 society demands institution-wide effort, true commitment at all levels, and courageous leadership by both the higher-education sector and society as a whole.

When sources on the subject of community engagement in "developed" countries are studied, it becomes obvious that, although the same issues are being addressed, the sense of urgency is growing more rapidly in South Africa than is the case in these countries. This is indicative of the fact that the South African higher-education sector has come to realise that the need to engage with local communities and other stakeholders in new and robust ways is of paramount importance for the future of the country. In this regard, the following statement by Gibbons (2006: 23) is of particular relevance to the oft-recurring engagement-versus-autonomy debate within higher education in South Africa: "Paradoxically, this fuller participation in the *agora* requires that universities, if they wish to maintain the autonomy that they seek (...), make it clear that it is their intention to serve the public good." Preparing students to be constructive professional participants in this endeavour is a matter of the utmost urgency. In the effort to encourage South African students to become more than mere members of the powerful class of upwardly mobile "professional vandals" mentioned in the introduction, community-based service learning already plays an important role.

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