Fostering Research Integrity through Institutional Policies: The Case of a Selected Institution of Higher Education[1]

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> *There is nothing more necessary than Truth, and in comparison with it everything else has only secondary value. This absolute will to truth: what is it? Is it the will to not allow ourselves to be deceived? Is it the will not to deceive?*
>
> (Nietzsche 1890).

Abstract

Truth, trust and integrity are essential to research at higher education institutions. These institutions have accordingly adopted several policies to foster research integrity. This article explores the likelihood that relevant policies at a selected institution of higher education foster research integrity. The qualitative, single exploratory case study commences with a review of scholarly literature and results in a conceptual model used for a directed content analysis of relevant institutional policies. The findings indicate that these policies do complement each other in fostering research integrity. Further research will be necessary to establish whether policies indeed contribute to responsible researcher conduct.

Keywords: Research integrity, research ethics, research misconduct, research ethics policies, researcher behaviour, higher education institutions; regulation

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Introduction

Truth, trust and integrity are essential to research at higher education institutions. Whitbeck (2004:48) puts it simply: "Scientific research, like other cooperative endeavors, requires trust to flourish". Trust is defined by Baier (in Whitbeck 2004:48) as confident reliance; whereas integrity refers to the moral quality of being honest reflected by a state of being whole, sound and of perfect condition (Dictionary.com 2013). A loss or decrease in the confidence of research by the scientific community and the public will mostly impair their reliance on its scientific merit. The effect is lowered expectations, defensive behaviour and reduced cooperation. Whitbeck (2004:48) does not advocate blind trust, but supports Luhmann s (1988:94) notion of "warranted trust and trustworthy behavior" to foster enduring trust and cooperation.

As authors we agree with Whitbeck that trust by peers and the public in the truth of research, namely research integrity, is exemplified by the responsible conduct of researchers, trust in their competence to achieve trustworthy outcomes in their fields of expertise, and trust in their devotion to demonstrate and transmit the values and principles associated with ethical scientific conduct (Whitbeck 2004:51). Disappointment and betrayal of the trust of the scientific community and public related to scientific misconduct undermines future trust and the integrity of science.

Higher education institutions have adopted numerous regulatory measures to foster research integrity in a context marred by scientific misconduct (Resnik 2003). Institutional research ethics policies remain a key regulatory measure to this end. The Singapore Statement on Research Integrity (World Conference of Research Integrity, 2010) represents the first international effort to promote the development of unified policies, guidelines and codes of conduct with a long-term goal to foster greater research integrity globally. Research integrity is anchored in the following moral principles: honesty in all aspects of research, accountability in the conduct of research, interpersonal professional courtesy and fairness and good stewardship of research on behalf of others (Singapore Statement on Research Integrity 2010). The ideals of the Singapore Statement have been extended and refined during the 3rd World Conference on Research Integrity (5–8 May 2013) in Montreal. The deliberations at this conference led to the creation of the Montreal Statement on Research Integrity (World Conference of Research Integrity 2013).

This study has been undertaken against the background of the recent adoption of policies by various institutions of higher education and funding authorities globally aiming at fostering research integrity (Cossette 2004:213) as well as the publication of several articles and books on the subject (Cossette 2004:213). The debates for and against the regulation of research integrity by means of ethical protocols and governance at institutions of higher education are as lively as ever. Those in favour of the regulation of knowledge through ethical protocols and governance argue that a university, as the custodian of knowledge, must safeguard and sustain the integrity of knowledge continuously (Holzbaur *et al.*, 2012:21). Those opposing the current system of research ethics regulation argue that the developments in research ethics ultimately limit scholarly research and thus "the structure what truths can be spoken and by whom" (Haggerty 2004:391).

Similar discourses for and against the regulation of research ethics echo in the passages of the selected higher education institution that represents the substantive context of the study. This institution responded formally to the international and national call for ethics regulation as evidenced in the adoption of a number of related policies and procedures, including the Policy on Research Ethics in 2007. Researchers in opposition of the regulation of research ethics display defensive behaviour and reduced co-operation in the formalised regulation process evident in insufficient application of related policy stipulations, complaints about the scope of ethics protocols and publicly voicing their objections about the perceived constraining effect of research ethics review. Against this background the following research question arises: What is the likelihood that relevant policies in the selected institution of higher education foster research integrity?

This article contributes to the current literature by proposing a conceptual model that could be applied in the context of higher education institutions to assess research integrity related policies for their likelihood to foster research integrity. This model consists of a combination of recognised characteristics of good policy and dimensions of research integrity. The model has been developed through a theory generating approach which will be explained in the next section.

Methodology

The study employed a qualitative, single exploratory case study. A case study is a "set of qualitative procedures to explore a bounded system in depth" (Plano Clark & Creswell 2010:243). The study commenced with a review of scholarly literature related to integrity at institutions of higher education, followed by the development of a conceptual model for assessing the likelihood of relevant institutional policies to foster research integrity. The conceptual model presented in table 2 was used as a framework to qualitatively assess four policies related to research integrity in a selected institution of higher education (representing the bounded system), namely the research and innovation policy, the policy on research ethics, the policy on copyright infringement and plagiarism and the employee disciplinary code. These policies were purposively selected as the unit of analysis upon the discretion of the authors because of its explicit or implicit intent to foster research integrity.

The assessment was done through a directed content analysis (Hsieh & Shannon 2005:1281) of the selected texts. The analysis focused predominantly on the contents of the policies. The directed content analysis entailed the use of a deductive category application consisting of predetermined codes derived from the conceptual model that emerged from the existing theory.

In an attempt to enhance the credibility of the study, the authors analysed the policies independently and after that, consensus was reached on the findings. The authors have extensive experience of the topic under study as they have served on research ethics committees (either as chairperson or a member) for more than three years. The transferability of the study is enhanced through a clear indication of the parameters of the theoretical framework to indicate how data production and analysis were guided by specific concepts, ultimately resulting in the development of a conceptual model. Dependability is reflected in the presentation of a logical, well documented study and conformability by creating a chain of evidence (Tables 1 and 3). (De Vos *et al.*, 2011:419 – 420.)

The article is divided into the following four sections: a brief overview of the regulatory history of research ethics and research integrity; a theoretical perspective on fostering research integrity through institutional policies consisting of a conceptual model representing the elements present in institutional policies likely to foster research integrity; the assessment of

the likelihood of the relevant policies of the selected institution of higher education to foster research integrity; and a reflection on the findings of the critical assessment.

Research Integrity and Research Ethics: A Historical Overview

The history of research integrity is interwoven with the reactive nature of research ethics regulation, marked by a number of important turning points. These turning points are situated in ethical transgressions against human participants in research in the biomedical field predominantly. The Nuremburg Code of 1947 marked one of the most notorious of these turning points. The Nuremberg Code is the first international statement of principles governing medical research as a response to the ethics transgressions linked to the war crimes committed by leading German doctors during World War II (Harrison & Rooney 2012:39). The Nuremberg Code was an attempt guided by the United States of America to regulate medical and scientific research involving human participants and focused on the voluntary consent of human participants, full disclosure and a favourable risk-benefit ration. The principles of the Nuremberg Code formed the basis for the World Medical Association s Geneva Declaration of Human Rights the following year (1948) (Harrison & Rooney 2012:39).

Another significant turning point was the disclosure of scientific misconduct, even amongst prominent researchers, by the works of Beecher from the USA and Papworth from the UK in the 1960s (Dingwall 2006:193). The Declaration of Helsinki (1964, last revised in 2008) was a response by the World Medical Association to establish international ethical guidelines that focused on clinical research protocols and Good Clinical Practice (World Medical Organization 2008).

The Belmont Report (Belmont Report, 1979 in Amdur & Banker 2011:19), a foundational document for the ethics of human participant research, followed due to the negative publicity of the Tuskegee Syphilis Study (1932–1972). The Belmont Report aims to protect the rights of human research participants by preserving respect for persons, beneficence and justice (Amdur & Bankert 2011:19).

Research ethics review in South Africa started in response to the work of Beecher in the 1960s, with the first research ethics committee constituted

at the University of the Witwatersrand. Since then research most institutions of higher education in South Africa have steadily adopted ethics regulations aiming at the protection of those who participate in research. Dhai (2005:595) argues that while South Africa has a climate favourable to enormous growth in research, it is also "home to a large number of vulnerable groups or poor populations who have limited or no access to education and health services and who accepts authority without question". South Africa has also had its fair share of research shames such as the Bezwoda scandal of the late 1990s (Dhai 2005:595).

The history of research integrity and research ethics reveal that the exploitation of the vulnerabilities of relevant actors (the public, peers and participants) by researchers remain a relevant concern in scholarly communities, initiating the adoption of relevant institutional policies and procedures to mitigate the risks.

Fostering Research Integrity by Means of Institutional Policies: A Theoretical Perspective

The purpose of this section is to obtain, by means of a review of scholarly literature, a theoretical perspective on the use of institutional policies to foster research integrity. Four concepts have surfaced as being of theoretical importance for this purpose, namely research integrity, research ethics, fostering and institutional policies.

Bearing in mind the wide collection of scholarship on research integrity, this review of scholarship has set out to firstly clarify the meaning of each of the concepts research integrity and research ethics, secondly, to identify the main discourses on the fostering of research integrity, and thirdly to develop a conceptual model for assessing the likelihood that the relevant policies foster research integrity in general and research ethics in particular. The authors view fostering as the encouragement and the promotion of an environment conducive to research integrity while an institutional policy is regarded as one of the instruments through which fostering is realised.

In order to identify a suitable theoretical perspective on the fostering of research integrity, a literature review related to key words such as research integrity and research ethics has been conducted. The literature has shown that various concepts exist for research integrity, perhaps because "…what is

right and true, ethical and fair may not be readily definable" (AAAS 2000:2). The reason for this, according to Cossette (2004:214) may be due to the lack of objective information on responsible conduct.

However, notwithstanding this assumed lack of empirical information on responsible conduct, the American Association for the Advancement of Science (2000) and various other scholars (Khanyile *et al.,* 2006:41; Cossette 2004:214; Macfarlane *et al.,* 2012:2, 3) have contributed to attempts to attain a common understanding of the concept research integrity. A review of their attempts has shown that the concept consists mainly of three dimensions, namely values, actors and conduct. See table 1 below.

Source	Values	Actors	Conduct
AAAS 2000:5	Scientific, (publication) standards, confidentiality	Scientist/ Researcher (implied)	Validity, falsification, fabrication, plagiarism, authorship, conflicts disclosure, public/ press announcements, data from unethical experiments, confidentiality of review
Khanyile *et al.*, (2006:41)	Justice and honesty; doing it right; telling the truth; aspirational standard	Emphasis on researcher vs. research communities, research institutions, and research environment	Proposing, conducting and reporting research; scientific conduct
Cossette (2004:214)	Responsible; quest for truth	Researcher (implied)	Conduct

Table 1 continued on next page

Source	Values	Actors	Conduct
Cossette (2004:214)	Lack a clear image of the more or less explicit standards; lack of any measurement of how standards are transgressed	Researchers; scientific community	
Cossette (2004:214)	Study through lapses in ethics	Researchers	Empirical research
Cossette (2004:215)	Probity and honesty, absence of misconduct	Researchers	
Macfarlane *et al.*, (2012:2, 3)	Values	Academics; researchers	Conduct and behaviour in teaching research and service
Dingwall (2012:7, 13)	Minimal reputation risk for institutions	Researchers	Research programmes
Dingwall (2012:8)	Sensitivity of issues	Researchers	Research projects
Dingwall (2012:9)	Confidentiality, anonymity, privacy of informants	Researchers	Institutionalised social research

Table 1: The Various Dimensions of Research Integrity

The summary in table 1 reveals that these scholars are in fair agreement that the concept research integrity refers to the values applying to the actions, behaviour and inclination of researchers when they are proposing, doing and disseminating research. Although the literature seems to agree that values such as justice, honesty and respect for the truth, underpin research

integrity, different views exist on the specific emphasis of these values, for example whether they are set to promote integrity or to prevent misconduct.

While the concept "research ethics" is also applied in this discourse, it is used synonymously by Cossette (2004:216) with "research integrity". He refers to lapses in ethics in a similar way as to lapses in integrity. He divides these lapses into two categories, namely fraud and infringements of standards of scientific conduct. Both these categories have been shown to meet the criteria for research misconduct, namely "any deliberate conduct that goes against the more or less explicit rules that a community of researchers has agreed on at a specific point in time concerning the behaviour to adopt when preparing or publishing the results of a research project" (Cossette 2004:215).

The examples of misconduct provided by Cossette (2004:216), focus primarily on the ethical relationship between the researcher and the broader scientific community (e.g. fabrication and falsification of information), co-researchers (abusive co-authorship, denial of contribution, unfair ordering of authors) and funders (misuse of research funding). It does not include the possible lack of concern for the participants in the research project as an example. This observation supports the view of Dingwall (2012:7, 13) that the initiative to foster research integrity had "very little to do with human subjects protection as such", but more with the limitation of institutional reputation risk. The gradual inclusion of the protection of human subjects into the centre of the research integrity discourse and institutional practice is thus reported by Dingwall (2012:13) as part of a process of preventing or limiting the risk of damage to institutional reputation.

In order to accommodate the diverse perspectives on research integrity, this study uses the concept research integrity as referring to (a) researchers accountability to their scholarly community, the participants in their research projects, and their employing and funding institutions, (b) the extent to which the actions, behaviour and inclination with regard to their planning, proposing, conducting and disseminating of research, (c) meeting the values, principles and standards as determined by their constitutional, regulatory and scholarly imperatives.

The above definition postulates relationships between the researcher and a diverse other consisting of a scholarly community, research participants, employing and funding institutions. The integrity of this relationship is determined by constitutional, regulatory and scholarly

imperatives reflected in, inter alia, research policies. The next few paragraphs demonstrate how the views on the centre of responsibility for fostering the integrity of this relationship has gradually shifted from the researcher as part of a scholarly community (AAAS 2000:2) on the one side of the spectrum, to the employing, funding and regulatory institutions (Cossette 2004:213; Hammersley 2009:214; Hedgecoe 2008:882) on the other side of the spectrum.

We view the regulation of research ethics thus within the context of research integrity as a specific focus on the relationship between the researcher and human participants as a specific category of the diverse other, whether it is primarily to protect institutional reputation (Dingwall 2013:13) or the interests of human participants.

Fostering Research Integrity by Researchers and their Scholarly Communities

The custodians of disciplinary knowledge, traditions and norms (including the fostering of research integrity) were regarded traditionally as the responsibility of researchers as organised in scientific societies (AAAS 2000:2). An example of this self-regulation is the so-called group consideration of research as practiced by the Clinical Centre of the US National Institutes of Health (Hedgecoe 2009:333). One of the reasons for their high standards of group consideration was to "emphasize the good standing of research at the Clinical Centre, and to insulate its work from oversight and interference by policymakers and lawyers at the NIH" (Hedgecoe 2009:333). Scientific societies are most commonly organised on a voluntary basis and their sanction on their members is consequently limited to their voluntary compliance with their professional standards and norms.

Professional Codes of Ethics

The standards or norms used by scientific societies for self-regulation or group consideration are codified, not in official policies, but in professional codes or guidelines such as Codes of Ethics or Foundational Guidelines (AAAS 2000:2–5). These codes were supposed to initiate "activities that will further promote the ethical conduct of research" (AAAS 2000:2). However, history has shown that when these codes are not enforced,

researchers will not necessarily comply (Dingwall 2012:5). This probably explains why the regulation of research ethics (even if it is self-regulation) and the enforcement of the codes are deemed to be necessary for ensuring that professional standards and norms, as well as research integrity, are upheld.

Regulating Research Integrity by Employing, Funding and Regulatory Institutions

External regulatory institutions are on the opposite side of the research integrity spectrum as the self-regulating scholarly community discussed above. This phenomenon of external regulating of research integrity is integrated with the growth of managerialism and corporatism within universities (Dingwall 2012:22). Within the context of managerialism, the regulation of research integrity has shown to be an exercise to reduce corporate and financial risks (Feeley 2007:764–765). Institutional regulation is sometimes perceived as a process that is more concerned with protecting the employing or funding institution than the research participants (Hedgecoe 2008:883). While the external regulation of research integrity is already common practice in those countries directly related to the United States of America, the introduction of processes of external regulation of research integrity as a condition for funding, is still in the discussion phase in Europe (Dingwall 2012:21). In fact, France, Germany and Italy have not shown any intention to adopt such controls for social science research (Dingwall 2012: 1). Institutional controls or regulation of research integrity seem to focus primarily on the protection of human participants in research and are usually enabled by appropriate policies and procedures. Institutional research ethics policies, thus, have shown to be pivotal in the regulation process and are discussed in the following section.

Research Ethics Policies

A more formal version of codification of norms and standards than codes of ethics is an official policy for research ethics. The main difference between codes of ethics as discussed above and an official policy is that the aforementioned is usually an instrument of self-regulation whereas the latter is an instrument of external regulation. External regulation is done by scholarly journals, funding institutions and universities (Cossette 2004:213;

Redman & Merz 2006:257). Where the research by Redman and Merz (2006:257) indicates that leading journals have not yet adopted "policies for managing allegations of misconduct involving manuscripts or published articles", the compulsory nature of research integrity policies by funding institutions and universities has already resulted in fierce scholarly debates (Dingwall & Rozelle 2011:45–56; Hedgecoe 2009:350; Redman & Merz 2006:257). Some of the arguments against the compulsory nature of regulatory policies and procedures are as follows (Dingwall & Rozelle 2011:45–56; Rhodes 2010:34):

- The danger exists that procedures and the adherence to prescribed rules may be elevated above normative evaluation.
- The increased number of interventions does not necessarily result in a change in perception of researchers on research integrity.
- Research integrity policies may not be enforced due to resource limitations.
- If the distance between the regulator and the regulated is small, the enforcement of research integrity policies will be limited.
- The unjustified inhibition of research and misconduct of research is equal to an "ethical catastrophe" (Rhodes 2010:34).
- Some research ethics policies imposed an unjustified constraint on researchers.

The inverse of the above arguments against research ethics regulation may be the following expectations from a justified research integrity policy:

- Enhancing of normative evaluation (opposite to a merely compliance approach).
- Fostering a change in researchers' ethical inclination with regard to research.

- Adequate institutional resources supporting the implementation of research integrity policies.

- Provision for adequate distance between the regulator and the regulated.

- Enhancing and not inhibiting research.

- Not imposing unjustified constraints on researchers.

The existence of research integrity policies implies the existence of implementing entities such as research ethics committees, which are discussed in the next section.

Research Ethics Committees (RECs)

Research Ethics Committees are well established in, for example the United Kingdom (UK) where the number of health research related Research Ethics Committees has expanded in a relatively short period of time (Hedgecoe 2009:349). The main reason for this rapid increase in the number of committees is an attempt to protect human subjects in research (Hedgecoe 2009:349). This trend was also evident in the United States of America (USA) where Institutional Review Boards on university campuses were established through federal legislation (Dingwall & Rozelle 2011:45–56).

These committees are clearly powerful as they have the authority "to request that research protocols be revised", and to disallow the research to continue (Dingwall & Rozelle 2011:45–56). Non-approval of proposals will result in the withholding of federal funding for their research and most probably in the rejection of publication by reputable journals (Dingwall & Rozelle 2011:45–56). Institutional Review Boards are clearly not advisory boards, but real decision-makers with far-reaching powers (Feeley 2007:764–765). Hammersley (2009:220) however, suggests that the role of RECs should be limited to the offering of advice, the provision of a structure in which ethical principles and their application can be discussed, as well as the initiation and facilitation of discussions about problem cases.

Although the RECs originated in the health sciences, research by Hedgecoe (2008:882) has shown that the RECs are not hostile to social

science research, especially qualitative research. However, a lack of qualitative and social science methodological knowledge in members of these committees may be the reason why "past committees have given qualitative research a rough ride" (Hedgecoe 2008:882). One would therefore expect that research integrity policies would provide for adequate methodological expertise in the composition of RECs.

As in the case of Research Integrity Policies, the existence and functions of RECs are widely criticised, for the following reasons (Hammersley 2009:212–214):

- Their perceived incapability of making sound ethical decisions about particular research projects and consequently inability to improve the ethical quality of social science research.
- The dubiousness of the legitimacy of their control.
- The serious negative consequences of increased ethical regulation.
- The dubiousness of the expertise of committee members.
- The insufficiency of the common ground on what is regarded as ethically within diverse contexts.

The literature has shown that the functions and scope of RECs are guided by the policies in terms of which they operate. The resistance against RECs seems thus to be directed to the policies in terms of which these committees operate.

A Conceptual Model for Fostering Research Integrity through Institutional Policies

Based on the review of scholarship in the field of research integrity discussed in the previous section, this section proposes a conceptual model representing the elements present in institutional policies likely to foster research integrity (see table 2). This model consists of the following three elements: (a) the researchers accountability to their scholarly community, the participants in their research projects, and their employing and funding

institutions, and (b) their actions, behaviour and inclination with regard to their planning, proposing, conducting and disseminating of research, (c) and the extent to which the aforementioned meet the values, principles and standards as determined by their constitutional, regulatory and scholarly imperatives. Leonard (2010:online) gives a list of 17 characteristics of a good policy that can help to determine whether it is going to be effective prior to its implementation. The criteria can be used as a checklist to identify any shortfalls in the policy. For the purposes of this conceptual model, the following four characteristics of good policy are pivotal:

- Clarity in purpose and outcomes.
- Alignment with organisational direction (vision, mission and values).
- Clarity of accountability.
- Enforceability by means of clear sanctions.

With regard to the fostering of research integrity it can thus be expected that these policies demonstrate the above characteristics of good policy embedded within those values, principles and standards that will achieve the following:

- Enhance normative evaluation of research.
- Foster a change in researchers ethical inclination with regard to research.
- Be implemented through the support of adequate institutional resources.
- Provide for adequate distance between the regulator and the regulated.
- Enhance and not inhibit research.

- Not unreasonably constrain researchers.
- Enable Research Ethics Committees to make sound ethical decisions about particular research projects and consequently avoid inability to improve the ethical quality of social science research.
- Clearly legitimise the jurisdiction of Research Ethics Committees.
- Adequately limit any negative consequences of ethical review.
- Clarify and assure the needed expertise of committee members.
- Establish a common ground on what is regarded as ethical within diverse contexts.

A close reading of the above characteristics and values, principles and standards has shown a substantive conceptual overlapping. Consequently a conceptual model to assess the likelihood of relevant policies to foster research integrity is presented in table 2 below.

Accountability	
Concepts	Assessment criteria
Policy intent	Clarity of purpose and outcomes of the policy and alignment with organisational vision, mission and values (Leonard 2010:online)
Jurisdiction	Clarity about the jurisdiction of research ethics committees (RECs); information on accountabilities and legitimacy of the process (Hammersley 2009:212–214; Leonard 2010:online)
Institutional Support	Provision for adequate institutional support (Dingwall & Rozelle 2011:45–56)
Expertise	Clarify and assure the needed expertise of committee members (Hammersley 2009:212–214; Hedgecoe 2008:882)
Independence/ Objectiveness	Provision for adequate distance between regulator and regulated (Dingwall & Rozelle 2011:45–56; Rhodes 2010:34)

Sanction	Enforceability through clear sanctions (Leonard 2010:online)
Values, principles and standards	
Norms	Establish common ground of what is regarded as ethical within diverse contexts to enable RECs to make sound ethical decisions (Leonard 2010:online)
Normative evaluation	Enhance normative evaluation of research through a description of what ought to be (prescriptions for actions or modification) (Dingwall & Rozelle 2011:45–56)
Researcher behaviour	
Enhance research	Intend to enhance and not to inhibit/unreasonably constrain research; adequately limit negative consequences of ethical review (Rhodes 2010:34)
Behavioural change	Intent to foster a change in researchers ethical inclination with regard to research (Dingwall & Rozelle 2011:45–56)

Table 2: Conceptual Model to Assess the Likelihood of Relevant Institutional Policies to Foster Research Integrity

A Brief Overview of the Policies Related to Research Integrity in a Selected Institution of Higher Education

This section gives an overview of a collection of policies within an institution of higher education in order to provide a critical assessment of the extent to which the policies meet the characteristics of good policy and comply with the values, principals and standards of research integrity as identified above. For the purpose of this critical assessment, the following policies related to research integrity have been identified and are summarised below.

Policy on Research and Innovation

This policy is based on the vision of the selected institution and aims to advance the institution s mission with regard to research and innovation in accordance with the constitutional provisions, policies and legislative frameworks, ethical considerations and the protection of human participants. This policy expects researchers to deliver quality and innovative research

and commits the institution to the provision of an enabling environment to this end.

Policy on Research Ethics

In support of the institution s Policy on Research and Innovation, the Policy on Research Ethics (first approved in 2007, and updated in 2012) aims at fostering an ethical and scientific intellectual culture demonstrated by research practices (paragraph 2.1). This policy is not intended to restrict or discourage research but, on the contrary, to enhance researchers capabilities for undertaking ethical research and to discourage unethical research practices.

Policy for Copyright Infringement and Plagiarism

The Policy for Copyright Infringement and Plagiarism 2005 states (paragraph 2) that all academic work, written or otherwise, submitted by a researcher is expected to be the result of his or her own skill and labour. This policy refers to the Copyright Act 98 of 1978 of South Africa and gives details of what copyright infringement and plagiarism entail. Paragraph 5 contains a sanction and states that a researcher who is guilty of the infringement of copyright or unethical practice will be subject to the applicable disciplinary code. This policy does not however elaborate on this matter.

Employee Disciplinary Code

Paragraph 3 of the Employee Disciplinary Code 2010 contains a list of the most often encountered types of behaviour that this institution of higher education regards as misconduct. Plagiarism is in the list and is given as representing one s own work as the work of another, without appropriately acknowledging the source (paragraph 3.13).

Fostering Research Integrity by means of Institutional Policies and Procedures: A Critical Assessment

For the purpose of the critical assessment of the abovementioned policies, the characteristics of good policies and the values, principles and standards for research integrity were combined in a conceptual model and are used as

criteria to assess the four mentioned policies. Table 3 below contains a summary of this assessment.

Criteria	Research and Innovation Policy	Policy on Research Ethics	Policy on Copyright Infringement and Plagiarism	Employee Disciplinary Code
Accountability				
Policy intent: Clarity of purpose and outcomes of the policy and alignment with organisational vision, mission and values	Yes as evident in sections 1, 1.3 and 5; Yes, as evident from sections 1, 4.3 and 4.5	Yes, as evident in part 1, section 1–3	Yes as highlighted in section 2; implied through reference to ethical values related to research integrity and the purpose of education (section 1)	Yes, section 1: content and outcome of misconduct; yes, implicit in section 2
Jurisdiction: Clarity about the jurisdiction of research ethics committees (RECs); information on accountabilities and legitimacy of the process	Yes, as evident from sections 7 and 10; not explicit	Yes, as evident in annexure A (Guidelines for ethics review)	Not clear at all	Yes, 7.2.3 provides the process and powers of an Employee Disciplinary Committee but not RECs

Table 3 continued on next page

Criteria	Research and Innovation Policy	Policy on Research Ethics	Policy on Copyright Infringement and Plagiarism	Employee Disciplinary Code
Accountability				
Institutional support: Provision for adequate institutional support	For research in general	Yes, specific procedures, committees and role-players identified	No	Yes, specific procedures, committees and role-players
Expertise: Clarify and assure the needed expertise of committee members	No	Yes, as evident in Annexure A, 5.2–5.3	Not applicable	No (see section 7.2.3(x)
Objective-ness: Provision for adequate distance between regulator and regulated	No, as regulation is not mentioned in this policy.	The Policy indicates that the institution should promote the observance of the Policy and take appropriate steps for protection against	No provision as the regulator is not mentioned	Yes, through the identification of specific role-players and committees

		pressures inimical to or resisting the observance of the Policy (4.3) without identifying the specific regulator		
Sanction: Enforce-ability through clear sanctions	Vague	Absence of clear sanctions. Does state that the Policy should be read in conjunction with other relevant institutiona l guidelines and policies (3.3)	Vague: section 5 contains a sanction (subject to applicable disciplinary code); no provisions for how such determinatio n should be made	Partially, yes (7.2.3(x))

Table 3 continued on next page

Criteria	Research and Innovation Policy	Policy on Research Ethics	Policy on Copyright Infringement and Plagiarism	Employee Disciplinary Code
Accountability				
Values, principles and standards				
Norms: Establish common ground of what is regarded as ethical within diverse contexts to enable RECs to make sound ethical decisions	Yes, very broad: section 4	Part 2, section 1.1 provides a framework for ethical decision-making, guided by the moral principles of the Belmont report, followed by a description of general ethics principles (1.2)	Yes: definitions in sections 3 and 4; no reference to or link with RECs	Section 3 provides a list of what is regarded as misconduct with reference to plagiarise; no link to RECs

Table 3 continued on next page

Criteria	Research and Innovation Policy	Policy on Research Ethics	Policy on Copyright Infringement and Plagiarism	Employee Disciplinary Code
Accountability				
Values, principles and standards				
Normative evaluation: Enhance normative evaluation of research	Yes, as evident from sections 3, 4 and 5	Yes, normative evaluation is intrinsically woven into the policy	By implication	With specific reference to plagiarism
Enhance research: Intend to enhance and not to inhibit/unreasonably constrain research; adequately limit negative consequences of ethical review	Yes	Yes, as indicated in section 3.1 of Part 1	Yes, reflected in section 6: Avoidance of liability; no evidence of constraint at all	Not applicable; no evidence of constraint at all
Behavioural change: Intent to foster a change in researcher ethical inclination with regard to research	No	Yes, as evident in the rationale of the Policy, (section 2), the provision of guidelines	Yes, by implication through awareness of what is regarded as copyright infringement and plagiarism,	Yes, with reference to the nature of scholarship (Section 3)

		for ethical research (Part 1), guidelines for research involving human participants (Part 2), guidelines for research involving animals or living organisms (Part 3) and guidelines for ethics review (Annexure A)	and the avoidance of liability	

Table 3: Critical Assessment of Institutional Policies Fostering Research Integrity

Discussion

Both the Policy on Research and Innovation and the Policy on Research Ethics have clear descriptions of the intentions (Leonard 2010:online) of the policies. In this way the accountability coupled to the research delivered is readily determined. In view of the fact that both the Policy on Research and Innovation as well as the Policy on Research Ethics do not contain specific provisions and requirements as to enforce (Leonard 2010:online) certain provisions in order to foster the integrity of research, it is necessary to turn to other relevant policies such as the Policy for Copyright Infringement and Plagiarism as well as the Employee Disciplinary Code to find provisions to read and apply in conjunction with these research policies. In this manner the sanction of certain unwarranted conduct by a researcher or an

infringement of a prescribed requirement, can be appropriately enforced. Although this may be an indirect way to reach a goal, the intention of the institution is clearly to foster the integrity of research and to prohibit unethical conduct in research.

The Policy on Research and Innovation and the Policy on Research Ethics contain various provisions that describe and relate to the normative aspects in research (Dingwall & Rozelle 2011:45–56). Therefore these policies indicate what conduct is regarded as ethical. Research Ethics Committees (RECs) are supposed to follow these provisions in order to make sound decisions when reviewing research. The research ethics review systems in the institution of higher education aim to protect potential human participants, animals and other living or genetically modified organisms, and contribute to the highest attainable quality of scientific and ethical research. The Policy on Research Ethics serves as the fundamental guide for normative ethics review (Dingwall & Rozelle 2011:45–56). During reviews, other local and international guidelines may be used by RECs as references to obtain clarity on certain aspects.

With regard to the expected independence and objectiveness of the RECs (Dingwall & Rozelle 2011:45–56; Rhodes 2010:34), RECs have shown to be independent bodies, as allowed within the policies of the institution, comprising members who have the ability to undertake thorough, competent and timely reviews of research proposals. They ought to be independent from political, institutional, professional and market pressure. The main role of RECs is to protect human participants and animals in research by promoting the conduct of ethical research at the institution. In particular, the RECs contribute to safeguarding the dignity, rights, safety and well-being of all actual or potential research participants and communities, as well as animals, while taking into account the interests and needs of researchers and the integrity of the institution. Research projects not involving humans or animals seem to fall outside the scope of the RECs functioning in terms of the relevant institutional policy.

When dealing with the behaviour of a researcher, or the behavioural change of a researcher (Dingwall & Rozelle 2011:45–56; Rhodes 2010:34), the Policy on Research and Innovation states that all academic work, written or otherwise, submitted by a researcher is expected to be the result of his/her own skill and labour. The Policy refers to the Copyright Act 98 of 1978 and gives details of what copyright infringement and plagiarism entail.

Paragraph 5 of this Policy contains a sanction and states that a researcher who is guilty of the infringement of copyright or unethical practice in terms of this specific Policy will be subject to the applicable disciplinary code. The Policy does not though contain provisions as to how such a determination is to be made and by whom. In the event of relevant evidence being available to support a complaint of copyright infringement and/or plagiarism, the applicable disciplinary code to turn to should be the institution s Employee Disciplinary Code. It accordingly appears that the matter will be dealt with in terms of the Disciplinary Code.

These provisions are not intended to inhibit research even though there may be a threatening touch. These provisions do rather enhance research and could serve to foster a change in a researcher s ethical inclination regarding research.

In paragraph 3 of the Employee Disciplinary Code a list is given of the most often encountered types of behaviour that this institution of higher education regards as misconduct. Plagiarism is listed and is given as the presenting as one s own work the work of another, without appropriately acknowledging the source (paragraph 3.13). Any alleged misconduct must be reported to the Directorate: Employee Relations and Human Resources Policy where it will be investigated (paragraph 4.1.1). If the employee charged with misconduct based on plagiarism is found guilty by the Employee Disciplinary Committee, the Committee must determine an appropriate sanction which could include, among others, corrective and rehabilitative measures, a written warning or dismissal (paragraph 7.2.3(x)). It appears though that the list of types of behaviour in this Policy does not cover all the aspects described in the Plagiarism Policy that amount to unethical practice.

It appears from the selected policies that the intention of this institution of higher education is to enhance research to enable researchers to deliver quality research outputs, but also to discourage unethical research practice among researchers. It is unfortunate that the two primary policies involved, namely the Policy on Research and Innovation and the Policy on Research Ethics, do not contain details of research regulation, sanctions and enforcement that form a clear and complete procedure under one title. This implies that some parts in the policies of the institution need to be revisited in order to meet the criteria of good policy in all respects. Besides this

aspect, the relevant policies as a collection have shown the likelihood to foster research integrity in the selected institution.

Conclusions

This article sets out to assess the likelihood that the relevant policies within a selected institution of higher education aim at fostering research integrity. This has been done against the historical backdrop of the gradual development of an awareness of research integrity and the regulation thereof.

This article contributes to the existing body of scholarship by proposing a conceptual framework for assessing the likelihood of institutional policies to foster research integrity. In an effort to validate this model, it has been applied to policies related to research integrity of a selected institution of higher education.

This model is structured around the main concepts accountability, values, principles and standards and research behaviour and has been used to assess the likelihood to which these policies foster research integrity. The assessment has shown that these policies complement each other. The institutional accountability for research integrity is reflected in the complementary structure of policy intent, procedural jurisdiction, expertise, objectiveness and adequate sanctions. In addition, the policies have been assessed for the extent to which they reflect the institutional values, principles and standards for research integrity. To this end the assessment focused primarily to the extent to which these policies encourage a normative evaluation of research. Again the assessment has shown that the policies complement each other by providing collective institutional values as well as specific principles and standards guiding research integrity. The third part of the model reflects the likelihood of the collection of policies to influence research behaviour. As a collection, these policies intend to enhance and not to constrain research.

The application of this model on the collection of relevant policies in the selected institution has shown their likelihood to foster research integrity. The focus on a specific selected institution of higher education may inhibit the generalisability of the study to other contexts. The authors dealt with this potential limitation by presenting the theoretical parameters of the study to allow the reader to determine whether the case described can be generalised to assess current research integrity related policies and thus

being transferred to other settings (de Vos *et al.,* 2011:420). However, further research will be necessary to investigate whether these policies have changed researchers attitude towards research integrity and research ethics, consequently resulting in behavioural change. Future research should also be conducted to evaluate the quality of the model and its usefulness for other settings.

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