

Teaching research integrity in higher education: policy and strategy

Kerry Shephard^{a*}, Tiffany Trotman^b, Mary Furnari^a and Erika Löfström^c

^a*Higher Education Development Centre, University of Otago, Dunedin, New Zealand;* ^b*Division of Humanities, University of Otago, Dunedin, New Zealand;* ^c*Centre for Research and Development of Higher Education, University of Helsinki, Helsinki, Finland*

Recently published research suggested that university academics have qualitatively disparate views on some key aspects of teaching research integrity within the broader construct of academic integrity and surprisingly ambiguous views on others. In the light of this variation, we have reviewed the research and academic integrity policies of our institutions, and the relevant international literature, with respect to six areas of interest in order to understand how policy and strategy elements relate to, and may need to adapt to, the diversity of viewpoints that university colleagues may hold about them. We develop some generic recommendations that may help our institutions, and others, adapt to the diverse perspectives of academic colleagues about research and academic integrity and how it could be taught.

Keywords: academic integrity; change in higher education; data fabrication; higher education policy; plagiarism; research integrity; teaching and learning in higher education

Introduction

Perhaps some of our students do fabricate data for assignments and laboratory reports when they first enter higher education, but surely they soon learn not to? And, surely, propensity to plagiarise is a passing phase for our least experienced undergraduates? With senior academic colleagues' involvement in undergraduate education, this must surely abate. As a result of sound undergraduate teaching and research supervision, we should hope that academic misconduct does not occur amongst doctoral students and academic staff. On the contrary, academic integrity issues in our institutions are current and pressing (Honig & Bedi, 2012; Ison, 2012; Lin & Wen, 2007). International higher education literature and mainstream media frequently report on academics fabricating research data, postgraduates plagiarising in their dissertations and undergraduate cheating scandals in universities somewhere in the world. Bertram-Gallant (2008) describes academic integrity as a 'learning and teaching imperative'. We agree and think that there is a higher education problem here that needs to be addressed. This article addresses how higher education teaches research integrity but of necessity situates this within the broader context of academic integrity and therefore includes many relevant facets of learning and teaching integrity in academia. Where appropriate we have drawn upon Jordan (2013) for conceptual clarification in this complex field. In the remainder of this article, readers should assume that the term academic integrity incorporates every facet of research integrity. Where the context of our text relates principally to teaching students to be

*Corresponding author. Email: kerry.shephard@otago.ac.nz

This article was originally published with errors. This version has been corrected. Please see Erratum (<http://dx.doi.org/10.1080/1360080X.2015.1125825>).

researchers, we use the term research integrity, but in most academic situations it would not be reasonable to separate teaching how to research from other forms of academic teaching.

Many institutions, ours included, have extensive policies, strategies and support mechanisms designed to ensure that students learn and apply generally acceptable principles of academic integrity. Some institutions include taught elements in their approach, emphasising that integrity needs to be taught and learned and that the issues are at least in part an institutional responsibility rather than wholly focused on individuals (Bertram-Gallant, 2008). Processes more generally include rules, support to adopt them and punitive elements; the latter emphasising the consequences of being caught. Within our own institutions, we identify comprehensive policies and strategies relating to academic integrity and list these in Table 1. In the context of how our students learn integrity in their research and broader academic work, much in these documented processes relates to how well the university academics that supervise, or otherwise teach, our students how and what to learn and how to research, address their academic roles. We suggest that a critically important aspect of higher education's approach to achieving academic integrity is that university teachers deliberate on what academic integrity is, how it can be taught and whose responsibility it is to teach it. These are not, however, trivial or uncontested matters. On what academic integrity is,

Table 1. Our institutions' policies and strategies on how best to teach academic integrity.

At the University of Otago, New Zealand, we have a Responsible Practice in Research – Code of Conduct, a Procedure for Dealing with Allegations of Misconduct in Research (University of Otago, 1994) addressed at staff academic misconduct, and Dishonest Practice Procedures (University of Otago, 2011) designed for student academic misconduct. The University of Otago is currently revising its academic dishonesty policy.¹ The University of Helsinki has adopted the Finnish national guidelines for 'Responsible conduct of research and procedures for handling allegations of misconduct in Finland' (Finnish Advisory Board, 2012) and has its own guidelines for handling cheating and plagiarism amongst students (University of Helsinki, 2011) and for establishing ethical principles for teaching (University of Helsinki, 2012).

The Finnish guidelines for responsible conduct in research suggest that universities 'should ensure that their students are well versed in the principles of the responsible conduct of research and that the teaching of research integrity is integrated into their graduate and postgraduate programmes' (Finnish Advisory Board, 2012, p. 31). The University of Helsinki adopted this idea in its previous Programme for the Development of Teaching and Studies (in 2006) stating that '[R]esearch and professional ethics will be integrated into studies in the major subject. Departments will be responsible for integrating the basics of research and professional ethics into studies leading to the Bachelor's and Master's degrees as part of methodology studies and thesis work. Postgraduate programmes will include field-specific training on research ethics' (p. 72). The Ethical Principles for Teaching and Studies at the University of Helsinki (2012) particularly highlight the role of modelling ethical behaviours as a key method of instilling these values in students. The Finnish National Board for Research Integrity has identified the need to attach greater importance to ways of facilitating integrity. In 2014, it established a working group to produce recommendations for how integrity training might best be organised.

Otago's Responsible Practice in Research – Code of Conduct emphasises that students must be aware of ethical standards and the nature of intellectual property, and whose role it is to ensure that this is so, but does not detail how this will be achieved. (University of Otago, 1994). More generally, the University of Otago expects all departments to foster 'Knowledge of ethics and ethical standards and an ability to apply these with a sense of responsibility within the workplace and community' (University of Otago, 2014).

¹The University of Otago has now revised procedures relating to dishonest practices. Its new academic integrity policy is available at <http://www.otago.ac.nz/administration/policies/otago116838.html>.

researchers emphasise honesty (East & Donnelly, 2012) but also identify disciplinary and other differences in interpretation. Fielden and Joyce (2008), for example, reviewed 125 academic papers to reveal a range of conceptions about the nature of academic integrity. On how academic integrity is taught and learned, Alfredo and Hart (2011) suggest that most students learn ethical guidelines and codes of conduct from their advisors, but many researchers accept that students learn rules and standards by observing and participating in academic communities (Kitchener, 1992) and that how students come to view research ethics and academic integrity may be strongly influenced by their observations of how teachers and researchers around them behave (Fisher, Fried, & Feldman, 2009; Gray & Jordan, 2012). On whose responsibility it is to teach academic integrity, we suspect that higher education has always taken academic integrity seriously and does attempt to promote it through specific teaching. But perhaps higher education struggles to incorporate it within more conventional learning and teaching processes involving, as examples, intended learning outcomes, planned learning activities and assessment.

Because we were concerned about these different conceptions of academic integrity in the literature, and their possible impact on the efficacy of our institutional policies, we used Q-methodology to explore our academic colleagues' conceptions about their role in promoting integrity in higher education in the context of research supervision, in two research-focused higher education institutions, each in a different region of the world (Löfström, Trotman, Furnari, & Shephard, *in press*; Trotman, Furnari, Löfström, & Shephard, 2013). Q-methodology is a research approach that helps make sense of complex phenomena about which different points of view can be expressed (Brown, 1996). We describe Q and how we used it in detail elsewhere (Löfström et al., *in press*). The results suggested that university academics in these institutions may be divided into five groups on the basis of strong but qualitatively different views that groups have on several key aspects of teaching academic integrity, including (1) how best to teach academic integrity to our students, (2) whose responsibility it is to teach it and (3) on the most appropriate source of moral and ethical direction on which basis potentially contested matters of integrity are to be decided. In addition, the results suggest that there may be some other key aspects of this academic debate that individuals have strong and disparate views on, but that when combined into groups based on other, more cohesive themes, no group has particularly strong collective points of view about. The research identified no particular group-wide position on (4) the need for academic development for integrity, (5) how student collaboration for learning may be negatively impacted by institutional measures in support of integrity and (6) the role of whistle-blowing in achieving integrity. It appears that despite the importance of academic integrity to higher education and the resulting extensive policy infrastructure higher education institutions and their teachers still struggle to agree on basic elements of this complex issue. We think that this diversity of opinion is likely to have an impact on the efficacy of institutional policies designed to promote integrity.

This article reviews our institutions' policy structures (in Tables 1–6) in the context of the academic literature and of our findings on these six facets of higher education learning and teaching in the context of academic integrity, with a focus where possible on research integrity. For each facet, we consider the likely implications of the diverse viewpoints held by our academic colleagues. In the discussion, we develop generic recommendations for consideration by higher education colleagues and institutions.

Table 2. Our institutions' policies and strategies on whose responsibility it is to teach academic integrity.

There are policy instruments in place within our institutions that identify the responsibilities of academic staff. At the University of Otago, the Responsible Practice in Research – Code of Conduct suggests that ‘... research supervisors should ensure that students are aware of the ethical standards relevant to their work. This includes the nature of intellectual property. Supervisors should ensure that the work submitted by students is the students’ own and that data have been validly obtained’ ... ‘Individuals given responsibility for research supervision should be competent in the field and have the time to supervise students adequately’ (University of Otago, 1994). Strictly interpreted this policy element does not identify responsibility to teach academic integrity as belonging to an academic or research supervisor. As described below, being aware of ethical standards requires a different form of learning than does behaving ethically.

The Finnish Advisory Board (2012) suggests that ‘Each individual researcher and research group member is primarily responsible for complying with the principles of the responsible conduct of research. Nonetheless, the responsibility also rests on the whole research community: research groups and their principal investigators, the directors of research units and the administration of research organisations’ (p. 31). Furthermore, the Ethical Principles for Teaching and Studies at the University of Helsinki (2012) state that ‘[L]earning from the actions and example of teachers and other experienced members of the academic community is key to the development of academic expertise. Not only do students adopt good practices, they also take up poor procedures. Anyone working and interacting with students should aim to be a good example and promote the dissemination and establishment of ethically excellent procedures’ (p. 15). However, these ethical principles also acknowledge that ‘[I]n terms of teaching, it is essential that teachers have a real opportunity to work independently, set objectives and influence their own activities and related conditions. This ideal has traditionally been expressed as “the freedom of university teaching”. What needs to be kept in mind when planning common objectives and methods is that responsible and committed activities can never be forced on people: all those involved should find the decisions to be relevant to their own work and tasks’ (p. 8). Overall, there is a strong reliance on individual teachers’ voluntary commitment to promoting academic integrity.

Aspects of academic integrity about which groups of academics may have different views

1) *On how best to teach academic integrity*

Some universities have attempted to address the academic integrity of their students at least in part through the provision of compulsory online short courses or tutorials addressing ethical academic practices (e.g., see the University of Auckland, 2014). Attendance to, completion of, or compliance with, these forms of learner support, however, do not necessarily equate with student learning. In one investigation into the use of such resources, only a third of students accessed online resources about plagiarism (Brown, Dickson, Humphreys, Mcquillan, & Smears, 2008) and in another students themselves emphasised the need to learn about correct referencing, collusion and plagiarism through completing tasks and receiving feedback, rather than using the resources provided by the institutions (Sutton & Taylor, 2011). Bernardi, Lecca, Murphy, and Sturgis (2011) studied ethics education and identified that this generally had limited influence on the ethical solutions students offered to a set of ethics scenarios. These authors also suggest that students who voluntarily take ethics courses as electives may benefit more from these than students who take compulsory ethics courses.

Table 3. Our institutions' policies and strategies on whose moral or ethical compass best leads the way to integrity.

The Otago Responsible Practice in Research (University of Otago, 1994) and Dishonest Practice Procedures (University of Otago, 2011), the Finnish guidelines for responsible conduct in research (Finnish Advisory Board, 2012) and the Ethical Principles for Teaching and Studies at the University of Helsinki (University of Helsinki, 2012) can all be seen to represent ethical compasses for academics, the deviation from which may break with a number of national and international ethical standards for responsible practice in research. The latter document attempts to establish a set of values and ideals to inspire and encourage reflection on the academic community's routines and practices as they pertain to teaching and learning. Our existing integrity-related policy statements may be more aligned with liberal ideals than they are with more formal recognition of higher education's need to 'teach integrity'. By their nature, guidelines are simply that. They generally lack detail on which decision-making can be unambiguously right or wrong. With respect to ethical matters, guidelines generally refer to additional bodies, such as ethics committees. Specific direction is uncommon, but not absent. The University of Otago, for example, does not accept research funding from the tobacco industry (University of Otago, 2004). In general terms, however, academics have great latitude in how they interpret and enact ethical guidelines.

There are clear policy implications of this difference that may contribute to the confusion about the teaching of academic integrity in the literature and that may also reflect different viewpoints on the nature of academic freedom and the roles of higher education. In New Zealand, for example, 'Society' expects its university academics to act as its critic and conscience; a responsibility laid down in New Zealand's 1989 Education Act, which also enshrines the protection of academic freedom for this purpose. Academic staff who accept this responsibility may choose not to have their personal ethical decision-making driven by any particular institutionally applied or society-endorsed moral or ethical code. Also one may in liberal society come across the idea that individuals should ultimately be free to choose which values they adopt and which they reject, and indeed this may be a possible interpretation of autonomy (Haydon, 2006). Our graduates should be able to find their way through complex ethically fraught situations, and they cannot do this if they have not been encouraged to think for themselves. It is possible that some of the participants in the Löffström et al. (in press) study had this idea in mind when adopting the view that one may not need to conform to any particular moral code. Policies and strategies that are normative and prescriptive in nature may not appeal to academics who would rather see that individuals learn to think and reason for themselves.

Table 4. Our institutions' policies and strategies on the need for academic development for academic integrity.

The Finnish national guidelines for responsible conduct in research maintain that 'In order to guarantee the practice of the responsible conduct of research, universities and universities of applied sciences should offer continuing education in research integrity to their teachers, to supervisors of theses, researchers, heads of research programmes and to other experts' (Finnish Advisory Board, 2012, p. 31). Both the University of Helsinki and the University of Otago have some professional development opportunities available to university teachers, but neither maintains an ongoing or regular programme. The challenge for both institutions is threefold: training opportunities provided by the university, for academic staff, are limited; academics themselves may not be eager to attend if training is offered; and the best way to engage academic staff in discussion about cultures of academic integrity and how this can be fostered is not clear. Inherent to the ethos of both institutions' policy frameworks is that academic staff should be involved in the development of institutional culture and be seen as important contributors to the dialogue of integrity on campus, but achieving this is not straightforward.

Table 5. Our institutions' policies and strategies on the interface between student collaboration, assessment and institutional policies on academic integrity.

The University of Otago has for many years identified an ability to work effectively as both a team leader and a team member as a graduate attribute (University of Otago, 2014). Similarly, the University of Helsinki emphasises cooperative skills as a key aspect of expertise and competence in its degrees (Programme for the Development of Teaching and Studies, 2006) and outlines that 'Studies and teaching connect the members of the academic community together' and this is manifested in that 'teaching is planned and implemented and studies arranged in a way that supports joint activities and open interaction' (University of Helsinki, 2012). In general, it seems likely that higher education accepts the need for and claims to encourage group work and the development of team-working skills. Internationally, assessed group work probably does contribute to individual student's degree outcomes but this is difficult for us to quantify in our institutions. Some evaluation data are, however, available. Graduates from the University of Otago, for example, are sampled 2 years post-graduation and asked, amongst many other questions, if their studies at university encouraged them to develop teamwork skills. On balance they respond positively, year after year, but to a far smaller degree than their positive responses to graduate attributes like written communication skills, problem-solving skills and analytical skills. More importantly, when asked if, post-graduation, they needed to apply these skills in employment, they responded very positively; creating a substantial imbalance between perceptions of development and of need and substantially more so than for any other course outcome, other than oral communication skills (University of Otago, personal communication). Similarly, at the University of Helsinki, in a recent survey, over 1000 graduating students assessed their cooperation and communication skills to be weaker compared to other generic skills, such as critical thinking, analysing and structuring information, and posing arguments and problem-solving (Tuononen, Parpala & Lindblom-Ylänne, 2015). Our own institutions have firmly worded definitions of, for example, in the University of Otago (2011), 'unauthorised collaboration' within the 'Dishonest Practices Procedures' and in the University of Helsinki 'collusion' within the Rector's guidelines for handling cheating and plagiarism (University of Helsinki, 2011); but arguably, less emphasis on encouraging group work to counteract the impression that all collaboration is wrong, unless it is specifically authorised.

Table 6. Our institutions' policies and strategies on whistle-blowing, honour code reporting and the nature of integrity.

Our institutions do not have policies and strategies in place that overtly address whistle-blowing, or honour code reporting, but as we write this in late 2014 we note that the Council of Europe has recently adopted a Recommendation [CM/Rec (2014)7] of the Committee of Ministers to member states on the protection of whistle-blowers (Council of Europe, 2014); but also that there is no international consensus on the actions of recent high profile whistle-blowers and the role of, for example, Wikileaks (<https://wikileaks.org/>) in our societies. Much appears to rest on what is or is not in the public interest, and on who is empowered to make this decision. As our students make these same decisions (Should I report on a colleague who is cheating or fabricating data? Is the infringement serious enough for me to do so? Is it in the public interest?), we wonder what advice and support higher education offers them and how well matched this advice and support is to how we behave ourselves.

This discourse may also be entirely relevant beyond the institutional policies and strategies that attempt to encourage academic integrity. Many of the managers, politicians, scientists and business people who have such significant impacts on our world pass through higher education. How we encourage, or discourage, whistle-blowing, and how we condone, or celebrate, whistle-blowers, may have impacts far beyond the particular academic integrity that we seek. It is interesting to consider that institutional decisions on whether or not to encourage whistle-blowing in higher education as a means to generate academic integrity may impact not only on the perceptions of the integrity of the institution but may also impact on the integrity of societies and indeed of nations.

Several ways of making the teaching of academic integrity more effective have been identified. Some research supports the notion that ethical sensitivity, as a prerequisite for ethical decision-making and the basis for integrity, is an ability that can be learned and to this end, educational interventions on research ethics have proven successful (Clarkeburn, 2002a; 2002b; Fisher & Kuther, 1997; Sirin, Brabeck, Santiani, & Rogers-Serin, 2003). Syllabi and course outlines that explicitly mention integrity-related content and learning outcomes are an effective means of assuring that academic integrity is acknowledged in course content (Gynnild & Gotschalk, 2008). Some research reports on examples of successful integration of integrity-related content in courses (e.g., Burr & King, 2012; Zuccherro, 2008). Connecting the integrity and ethics content to something that is familiar to students (e.g., reality TV, Burr & King, 2012) and analysing ethical issues in research through the perspectives raised in that context helps students to recognise ethical content and transfer problem-solving strategies to new domains, such as research ethics. Contextualising ethical issues appears to improve students' ability to recognise and understand the nature of ethical issues (Löfström, 2012).

But not all learning takes place through participation in programmes and courses or through explicit content. Students also learn to act with integrity through their interactions with academic staff (Aluede, Omeregíe, & Osa-Edoh, 2006; Anderson & Louis, 1994; McCabe, 1993). Supervisors of student research projects, in particular, are in a key position to influence students' awareness of academic standards and their adherence to these (Alfredo & Hart, 2011; Gray & Jordan, 2012) and integration into the academic community may help to prevent research misconduct (True, Alexander, & Richman, 2011). Table 1 details the policy infrastructure extant in our institutions and explores its implications to how best teach academic integrity.

Although the literature offers no consensus on how best to teach research and academic integrity to our students, it does provide us with some insights about why achieving integrity in our students is not a simple objective for higher education and guidance on how to enact our institutional policies, pedagogically speaking. One of the goals of academia is to foster the growth and development of independently and critically thinking individuals. In the context of ethics and integrity, we might hope that our students learn to exhibit thinking appropriate to integrity and ethical behaviour. This educational objective is not simply focused on a cognitive ability to be learned. With respect to Bloom, Krathwohl et al.'s cognitive and affective domains of learning, students need to know, understand, evaluate and apply knowledge about integrity, but they also need to frame this cognition within their personal affective values and attitudes, whilst learning whether or not to behave appropriately with respect to the ethical frameworks inherent to research in higher education (Bloom, Hastings, & Madaus, 1971). In this sense, academia may be concerned with teaching students how to behave and, hence, how to think and what to think about integrity (cf. Haydon, 2006, p. 55) as even the most critically thinking student who chooses to behave poorly is in some senses a failure for higher education. Bloom et al. ask 'Can we teach values without engaging in indoctrination or "brainwashing" techniques so foreign to our concepts of education?' (Bloom et al., 1971, p. 226) and go on to suggest teaching approaches to avoid the charge of 'brainwashing'.

As institutions design their educational approaches, they need to be specific about what it is that is being taught, as only then will a specific approach make sense. Teaching students 'how or what to think' involves different educational processes than teaching the application of rules and procedures. Depending on one's position about the nature of academic integrity, it is possible that both are required in some measure.

In light of the various viewpoints identified by Löfström et al. (*in press*), academic colleagues are likely to have diverse views on how to put these expectations into practice. Some academics are likely to address academic integrity as a set of rules and skills to be taught and learned in special courses or integrated within taught courses. Others may focus on their responsibility as a role model without specific attention given to teaching integrity. Some academics are likely to emphasise the need to foster students' willingness to ponder on ethical issues from a values perspective or even a willingness to engage in social reform (Löfström et al., *in press*). They would likely emphasise the development of their students as autonomous thinkers with a disposition to use their knowledge and skills – and values – in appropriate ways considering the circumstances or contexts (cf. Haydon, 2006). Others may focus on the responsibility of students to learn and on their role in identifying academic misconduct. Within this variation, even if all students obtain some baseline knowledge about integrity through, for example, a first-year undergraduate course, their deeper learning may be subject to the happenstance of which academics they encounter in their journey through higher education.

2) *On whose responsibility it is to teach academic integrity*

Aluede et al. (2006) claim that academic staff 'are the most "critical" people on campus to prevent academic dishonesty, and without their active participation most other institutional efforts will fail' (p. 103). But Sutherland-Smith (2014) notes that academics may adapt or ignore institutional policies, if they clash with these individuals' beliefs or ideologies. This may result in the lack of consistency in institutional decision-making and quality management. According to Sambunjak, Straus, and Marušić (2006), mentorship with regard to academic integrity in academic medicine is recognised as important in education but is not prominent. Alfredo and Hart conclude, 'If a student has no mentor, if the advisor is simply an administrator, and if the research institution has no formal research ethics classes, we have to conclude that that the student is not receiving training in proper conduct of research' (Alfredo & Hart, 2011, p. 449). Table 2 outlines our institutions' policies and strategies on whose responsibility it is to teach academic integrity.

Löfström et al. (*in press*) identify that not all groups of academics agree that academic integrity is a value that needs to be promoted institution-wide and not all groups involve university administration if integrity issues arise. This research suggested that there is a lack of consensus amongst academic staff themselves about their responsibilities. Academics may agree that they have the experience and knowledge to teach academic integrity (Löfström et al., *in press*) but whether it is their role to engage with students on the topic and what they individually think teaching integrity involves are areas that lack agreement. For example, some academics in that study did not believe that 'moral behaviours can be taught' (unless perhaps students already have the disposition to act ethically) and consequently did not accept responsibility to teach academic integrity to their students. Some academics may voice a willingness to mentor students, model best practices in their teaching and research or attend to specific queries about academic practices but in a responsive rather than proactive manner. Without an institutional approach through policy and procedures to define more specifically whose responsibility it is to teach academic integrity and how this responsibility relates to the various academic tasks, it is possible that individual students will receive varying degrees of support in the development of academic integrity based solely on their selection of courses or research supervisors. While

individual academics may not see it as their role to engage with students about academic integrity, they may arrange for library or information specialists to train students in the skills of academic referencing and citation (Löfström et al., *in press*).

3) *On whose moral or ethical compass to use*

Macfarlane, Zhang, and Pun (2014) suggest that, according to the post-modern conception, it is inappropriate or not feasible to establish a set of universally legitimate norms for academic integrity and, therefore, rather than identifying a moral compass, focus should be on ethical shortcomings. However, in a project completed by a team of Australasian researchers in 2011, several exemplary elements to academic integrity policies were identified to assist in the development of a toolkit for evaluating policies (Bretag et al., 2011). One key element identified is an ‘approach’ or ‘a clear statement of purpose and values with a coherent institutional commitment to academic integrity through all aspects of the policy’ (Bretag et al., 2011, p. 7). For these authors, best practice in the development of policies explicitly recognises the importance of the purpose and values to be acknowledged and embedded into policy. Furthermore, integrity guidelines with respect to research internationally rest on notions of integrity that are normative in nature and based on principles commonly found in research guidelines (e.g., The European Code of Conduct for Research Integrity (European Science Foundation, 2011) and the Singapore Statement on Research Integrity (2010); see also Godecharle, Nemery, & Dierickx, 2013)). Table 3 details our institutions’ policies and strategies on whose moral or ethical compass best leads the way to integrity.

For some ethical issues relating to plagiarism and data fabrication, it seems likely that most academics in higher education would agree on policy purpose and values. But issues do arise for which agreement may be more challenging. Where research funding comes from, whether or not funders have the rights to embargo publication, the fine detail of what is ‘fair use’ under copyright and precisely which statements in a publication need to be referenced are all contested and have links to the integrity debate. It was not surprising that Löfström et al. (*in press*) identified different viewpoints on the issue of ethical direction. Four groups strongly disagreed with the statement ‘As long as I am open about what my research involves, it doesn’t need to conform to any particular moral code’ but one group was more positively disposed to this sentiment. This group, and one other, also agreed that ‘We cannot trust wider society to distinguish right from wrong. We must address academic integrity in our roles as academics’. These differences may be similar to that noted by Randall, Bender, and Montgomery (2007). These authors also used Q-methodology to distinguish different perceptions about academic integrity and identified that some academics appear to make decisions based on internal values and beliefs related to what they think is right, whereas others make decisions that are influenced by what society believes is correct.

Groups have indistinguishable views on these aspects of academic integrity but individuals within groups may hold divergent views about them

4) *On the need for academic development for academic integrity*

There is an expanding research base for this discourse. Research on doctoral students’ experiences of ethical issues in the supervision process suggests that doctoral students have experiences of practices that border on, and sometimes cross the line for, what can be

considered unethical (Anderson et al., 2007; Goodyear, Crego, & Johnston, 1992; Löffström & Pyhältö, 2014). In addition, discourses within higher education can reveal ethically questionable norms and values that may go undetected if not specifically identified and analysed (Löffström & Pyhältö, 2012). It seems that, at least in some contexts, the skills possessed by some teachers in higher education may not match those needed and that some form of professional development may be needed, whether that need is recognised or not. Training models, which involve academics in designing institutional integrity-guidelines and materials such as the ‘Design for Learning’ project (cf. East & Donnelly, 2012), is evidence of a systemic-level approach. Rather than a top-down initiative, the project asks grass-roots agents, including teachers, to explore and develop together an ethical framework for the institution. However, evidence of the existence of such initiatives is rare in the literature.

Those who hope that students will, in the future, act with highest standards may propose the introduction of ethics training. Kezar and Sam (2011) propose that academic staff are likely to prefer research-based ethics training that deals with core scientific questions and is dialogic in nature. Harris and Bastedo (2011) suggest that training that takes a prescriptive approach, perhaps focusing on distinguishing ‘right’ from ‘wrong’, may reinforce the idea that unethical behaviour is a problem of a few ‘bad apples’, alienating many academics from the idea that ethics training might be useful for them. Table 4 describes our institutions’ policies and strategies on the need for academic development for academic integrity

The diversity of academic viewpoints on aspects of teaching academic integrity to our students provokes us to ask questions about the extent to which we and our colleagues are trained or otherwise educated to develop integrity in our institutions. But all five groups of academics identified in Löffström et al. (in press) were more or less neutral on the statement ‘I need more professional development support to learn how to address academic integrity issues’; indicating something less than collective enthusiasm for more training. And, all groups more or less disagreed with the statement that ‘Academic staff don’t have the knowledge and competence to teach academic integrity’, suggesting that further training, if provided, would not necessarily be easily targeted. Qualitative data (Löffström et al., in press) indicated that academics often learned about the specifics of their institution’s academic integrity policy and procedures out of necessity whilst investigating suspected academic misconduct. Such an approach is reactive and may mean that academic staff are not proactively engaging with students on the importance of the topic through their teaching practices. Staff development in the area of academic integrity may allow academic staff to take a more proactive approach and embed academic integrity as an educational outcome rather than engaging with policy under less fortunate circumstances.

5) On the interface between student collaboration, assessment and institutional policies on academic integrity

Academic staff and students face a range of competitive pressures alongside which opportunities and expectations of cooperation may need to be actively encouraged and reinforced (Kezar & Sam, 2011). Sutton and Taylor (2011), for example, reported that students in their study ‘... Experienced a culture of competitiveness where they felt the need to protect their own interests ...’ (p. 837). It is widely accepted that learning in groups is in some respects better for learners than learning as individuals or as individuals in a large teacher-focused class, and prevailing pedagogical views have identified teaching

practices that could reinforce cooperative rather than competitive norms. The educational theories most often used to support this notion are those that emphasise social constructivism and those that interpret learning in communities of practice. Although there is an extensive literature that underpins these assertions, it may be enough to identify that the second principle in Chickering and Gamson's widely acclaimed 'Seven Principles for Good Practice in Undergraduate Education' states that 'Good Practice Encourages Cooperation amongst Students ... Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding' (Chickering & Gamson, 1987, p. 4). Furthermore, competitive environments have been found to foster subscription to counter norms of science, such as individual gain over collective good (Anderson & Louis, 1994). It is also widely accepted that, inasmuch as higher education is at least in part a preparation for employment, and that most work today involves working in teams, higher education needs to step up to the mark and prepare graduates to be willing and able to work, and to learn, in teams (Sutton & Taylor, 2011).

We should ask therefore what might be blocking, discouraging or limiting the encouragement of group work in our institutions. It could be argued that the trend in recent years away from formal examinations towards more authentic, assignment-based, assessment practices has had the unintended consequence of making many learning opportunities also summative assessment opportunities. We add to this the workload implications (to university teachers) of providing formative feedback on submitted assignments, resulting in many assignments being submitted just once, for summative assessment. We add further the not unreasonable assertion that grading for the work submitted needs to relate to individual students as individuals achieve a degree classification or grade point average at the end of the process. In addition to, but perhaps also as a consequence of, these factors, and as reported by Sutton and Taylor (2011), group work is not always popular with our students.

Sutton and Taylor (2011, p. 831) also assert 'Increased group work leads to issues around collusion when students are required to complete individual assessed coursework...'. Indeed, one other study suggests that unauthorised sharing, collaboration and collusion may be the predominant forms of student academic malpractice (Wellman & Fallon, 2012). That study showed that students regarded it as expected and natural that more able students would help out their peers. The efficacy of communicating academic standards to students appears to be diminished by staff's confusion about what constitutes academic dishonesty (Brown & Howell, 2001) and academic integrity (Bretag et al., 2014). Table 5 addresses our institutions' policies and strategies on the interface between student collaboration, assessment and institutional policies on academic integrity.

None of the five groups identified in Löfström et al. (in press) held particularly polarised collective views on the statements 'In the past students had to compete with one another for the best grade. Nowadays everyone who achieves the learning outcomes gets a degree so collaboration is always good' and 'Increased opportunity for students to collaborate online makes acknowledgement of individual authorship increasingly important'. The groups did hold markedly different views on a range of academic integrity issues but on group work issues our research subjects were collectively neutral, although the overall neutral scores in our raw data did disguise some differences in otherwise compatible assemblages of viewpoints. While students quickly recognise the value of

skills developed through group work, most will also convey concerns about how a mark recognising their individual contribution to a group project will be assigned to them. Some will have experienced peers ‘freeloading’ in a group setting or not contributing equitably to the project. Our definitions may be clear, but our messages may not be. We perceive disconnect between institutional policies on encouraging teamwork, on assessment and on integrity.

6) *On whistle-blowing, honour code reporting and the nature of integrity*

Studies suggest that students are generally hesitant to blow the whistle on their peers (e.g., O’Leary & Cotter, 2000; Rose & Fischer, 1998). Bertram-Gallant (2008) provides a historical account of the development of honour codes in American higher education. The account starts in the antebellum period 1760–1860 and emphasises a ‘Southern honour code’ that, for example, at the University of Virginia, defined ‘academic citizenship’ as ‘never betraying a fellow student’ (Thelin, 2004, p. 52, cited by Bertram-Gallant, 2008, p. 15). The account ends in the late twentieth century by citing work by McCabe, Trevino and Butterfield (1999) that concluded that academic misconduct continues even in honour code schools, likely because integrity policies and honour codes ‘have never been quite successful in persuading young people that it is honourable to inform on their fellow students who have committed infractions’ (Bowman, 2006, p. 5, cited by Bertram-Gallant, 2008 p. 31). In between, Bertram Gallant describes more than a century of the development of a particular interpretation of personal honour, in the form of honour code reporting on fellow students who may be cheating, as a way to encourage young people to help higher education maintain academic integrity.

This discourse is entirely relevant to our own institutional policies and strategies that attempt to encourage academic integrity. Many institutions around the world maintain honour codes as an important component of their overall strategy, and the creation of whistle-blower hotlines has been recommended for higher education institutions that wish to establish ethical governance practices and procedures (Harris & Bastedo, 2011). It seems highly unlikely to us that our institutions will adopt honour codes, but for our purposes here, this issue emphasises the difficulties that higher education has in defining, and therefore teaching, integrity. On that basis, this is a valuable discourse.

There is an expanding literature on whistle-blowing within different disciplines. Cabral-Cardoso (2004), in discussing ethical misconduct in business schools, emphasised the considerable courage that it takes for a whistle-blower to take action and that the action may be regarded as more reprehensible than the conduct that it addresses. This author quotes other sources to suggest that the hierarchical structure and culture of patronage that exists within the university system makes it difficult, for example, for junior colleagues to challenge the behaviour of senior colleagues. Martin (2011) addresses whistle-blowing in the context of the discipline of psychology. In this context whistle-blowing is a relatively well-understood construct and clearly aligned with psychological understandings of integrity. Psychologists have developed a range of tools to ‘measure’ individual integrity and these tools are widely used by human resource specialists. Martin used an ‘academic’ scenario (based on reporting on cheating students) and an ‘accounting’ scenario to record different propensities to ‘blow the whistle’ in these different situations. The results suggest that what is socially appropriate depends not just on the person who chooses how to behave but on the environment in which this behaviour occurs. [Table 6](#)

summarises our institutions' policies and strategies on whistle-blowing, honour code reporting and the nature of integrity.

This particular aspect of the pursuit of academic integrity divides even the authors of this paper. One of us graduated from an honour code university in the US. While there is no mandatory requirement to report on another student at that university, the environment of trust is pervasive (e.g., students sit unproctored final examinations) and one would be hesitant to contribute to damaging the special culture of the university. Honour code reporting within this context is considered an action to protect entities more important than an individual's qualification; an environment of trust, the reputation of the university and an expectation that those graduating with their degree have met the highest standards of academic integrity in their work. Another of us graduated from very different educational processes, in the UK, where to tell on a friend, colleague or even playground bully was an ultimate betrayal of all held to be honourable. Research subjects in the Q-methodology-based research that has led to this article may have been similarly divided. None of the five groups identified within that research (Löfström et al., [in press](#)) held particularly polarised collective views on the statement 'Students should report on other students who cheat' and the overall neutral scores in our raw data disguised some considerable difference in otherwise compatible assemblages of viewpoints.

Discussion and some suggestions for practice

Academics at our institutions may be united in respecting the importance of academic integrity, in the context of research supervision, but not of one mind about what it is, how it should be taught, whether or not it can be taught, whose responsibility it is to teach it and how to handle cases of misconduct (Löfström et al., [in press](#)). The purpose of integrity policies is to 'develop shared values with all stakeholders based on genuine and coherent commitment' (Bretag et al., 2014, p. 1153). Our institutions have many integrated policies in place, some of which appear, to us, to inadequately take into account the diversity of perspectives of university teachers who, in general terms, are expected to put these policies to practice. It may be tempting to seek a compromise between these viewpoints and, indeed, that may be the foundation for our current policy frameworks and of the challenging circumstances that higher education finds itself in at present. The analysis presented in this article may, however, nurture an alternative policy framework; one that adapts to the diversity of academic positions extant in our institutions.

On how to teach academic integrity, the diversity of opinion suggests to us that we would do well to simplify what we teach so as to be sure that we teach it well. Higher education institutions could, for example, develop simple and universally applied (across departments) referencing protocols for undergraduate research supervision and related general education. This might enable institutions to focus on students' vital acts of understanding what others have written and giving credit for others' work rather than on the detail of divergent referencing protocols. As our students progress into postgraduate research, they will be smart enough to adapt to the different needs of our different disciplines. Similar ideas about progression may also help us to scaffold the teaching of academic integrity in higher education. Some aspects of this domain surely can be taught as facts to be learned and skills to be acquired. But other aspects, such as honesty, are affective outcomes that are difficult to teach and to assess. At the very least they take longer to acquire than the knowledge involved in, say, correct referencing. Let us not assume that our first-year students will be as proficient in these outcomes as our third-year students will be, or that simple teaching and learning approaches can achieve the full

range of integrity outcomes desired. Progression of expectations is surely central to our needs in this respect.

The question of whose role it is to teach academic integrity seems to us, now, to be the wrong question. Clearly everyone in higher education who has a stake potentially has a role. The challenge for higher education is to find the best role for everyone involved. Surely this is one situation where diversity establishes an advantage? If we agree that a diversity of processes needs to be used to teach academic integrity, different roles become available for different academics. Some may wish to focus on the rules in early stages of undergraduate study. Others may subsequently introduce discussions on values and ethics. Ultimately, towards the later stage of undergraduate study, academic staff may put themselves forward as role models. This should be a matter of organisation, not contestation.

Our question on whose moral or ethical compass should steer our efforts towards the academic integrity of our students has proved to be a great challenge to our group, as it is as much about the nature of integrity as it is about who or what defines it. It may not be possible to use all existing frameworks on academic misconduct or on research integrity as a compass as some of them are insufficiently precise for both ethical reasoning and moral guidance. They generally require academics to either decipher the ethical frameworks within which moral decisions are made or to make moral decisions on right and wrong themselves. Researchers who identify these tasks as part of their academic roles may have less problems in this regard than those who seek moral or ethical guidance from institutional policies on the fine detail of decision-making. Our analysis of honour codes and whistle-blowing in higher education has been similarly challenging to our group. We four authors emerge as divided as were the research subjects in Löffström et al. ([in press](#)). However, our differences, rather than presenting a problem, suggest a solution. Academics in higher education and our students have to deal with contested issues. There may not be a clear set of rules that can be applied in every case. The principal role of an academic may be to support deliberation for the benefit of society and to help students to develop this capacity (in the cause of cultivating a critical citizenry, as suggested by Williams 2014). On matters of integrity, teaching the rules alone will not do and teaching integrity will require the full complement of skills extant in higher education today. This moves us directly to the need for academic staff development and on this matter we are not surprised that our colleagues were not able to formulate clear or polarised views, given different perspectives on how to teach academic integrity and who should teach it. Academic staff developers in higher education are no more, or less, qualified to teach academic staff a set of rules and affective outcomes (such as honesty), than are these academic staff able to teach their students. We should hope that academic staff develop their moral and ethical underpinnings during their undergraduate days and that they are capable of learning their institution's or nation's rules if they do not know them already. In this framework, the task for academic development is to provide a place within which deliberation on contested issues can flourish and a model that university teachers can use in their own learning and teaching situations with their students.

On group work, we suggest that academic integrity policies, perhaps particularly in the context of research integrity, need to function effectively within an environment that encourages group learning without compromising, or confusing, students about the standards of integrity in their work. Research, nowadays, is seldom an individual pursuit. Assessment guidelines and academic integrity policies need to be written so that students can leverage the benefits of group work while remaining confident that their individual contribution will be recognised and appropriately valued. For example, staff may include

an individual reflective component to be submitted with the group project to ensure that students have an opportunity to contextualise their contribution to the work and any challenges they faced in working within a group. Perhaps in the future universities will shift their instructions about collaboration in assignments from an assumption of no collaboration unless this is specifically allowed, to an assumption of collaboration unless this is specifically not allowed. Clearly there are some situations where individual work needs to be assessed. But we find no case for this to be a standard expectation. Undoubtedly, it may be simpler for a university teacher to ask his or her students to learn and submit work as individuals rather than groups, but this may also be what underlies the underdevelopment of teamwork skills as a graduate attribute. Higher education needs both collaboration and integrity.

Concluding remarks

We suggest that university students are bright people and it is our job as researchers, teachers, supervisors and administrators to enable them to use their intelligence as effectively as possible. If they are going to enter a profession, they need to know the rules of that profession. As graduates within one or more discipline, they need to know the rules of each discipline. In both respects, we have experts who can help them. As citizens of the world and graduates of the Universities of Helsinki and Otago, however, we have loftier ambitions for them. We want them to develop personal attributes and skills that will enable them to decide for themselves what is right and what is wrong, how to situate these decisions into appropriate ethical frameworks and how to behave. As academic communities we are still struggling to come to grips with this monumental task. But it is our task.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Academy of Finland under Grant 252813 to the last author.

References

- Alfredo, K., & Hart, H. (2011). The university and the responsible conduct of research: Who is responsible for what? *Science and Engineering Ethics*, 17, 447–457. doi:10.1007/s11948-010-9217-3
- Aluede, O., Omoregie, E. O., & Osa-Edoh, G. I. (2006). Academic dishonesty as a contemporary problem in higher education: How can academic advisers help. *Reading Improvement*, 43(2), 97–106.
- Anderson, M. S., Horn, A. S., Risbey, K. R., Ronning, E. A., De Vries, R., & Martinson, B. C. (2007). What do mentoring and training in the responsible conduct of research have to do with scientists' misbehavior? Findings from a national survey of NIH-funded scientists. *Academic Medicine*, 82, 853–860. doi:10.1097/ACM.0b013e31812f764c
- Anderson, M. S., & Louis, K. S. (1994). The graduate student experience and subscription to the norms of science. *Research in Higher Education*, 35(3), 273–299. doi:10.1007/BF02496825
- Bernardi, R. A., Lecca, C. L., Murphy, J. C., & Sturgis, E. M. (2011). Does education influence ethical decisions? An international study. *Journal of Academic Ethics*, 9, 235–256. doi:10.1007/s10805-011-9134-3
- Bertram-Gallant, T. (2008). Academic integrity in the twenty-first century: A Teaching and learning imperative. *ASHE Higher Education Report*, 33(5), 1–143.

- Bloom, B. S., Hastings, J. T., & Madaus, G. F. (1971). *Handbook on formative and summative evaluation of student learning*. New York, NY: McGraw-Hill.
- Bowman, J. (2006). *Honor: A history*. New York, NY: Encounter Books.
- Bretag, T., Mahmud, S., Wallace, M., Walker, R., James, C., Green, M. . . . Partridge, L. (2011). Core elements of exemplary academic integrity policy in Australian higher education. *Presented at the 5th Asia Pacific Conference on Educational Integrity: Culture and values, and published in the International Journal for Educational Integrity*, 7(2), 3–12. Retrieved from <http://www.ojs.unisa.edu.au/index.php/IJEI/article/viewFile/759/574>
- Bretag, T., Mahmud, S., Wallace, M., Walker, R., McGowan, U., East, J. . . . James, C. (2014). 'Teach us how to do it properly!' An Australian academic integrity student survey. *Studies in Higher Education*, 39(7), 1150–1169. doi:10.1080/03075079.2013.777406
- Brown, C., Dickson, R., Humphreys, A., McQuillan, V., & Smears, E. (2008). Promoting academic writing/referencing: Outcome of an undergraduate e-learning pilot project. *British Journal of Educational Technology*, 39, 140–156.
- Brown, S. R. (1996). Q methodology and qualitative research. *Qualitative Health Research*, 6, 561.
- Brown, V. J., & Howell, M. E. (2001). The efficacy of policy statements on plagiarism: Do they change students' views? *Research in Higher Education*, 42(1), 103–118. doi:10.1023/A:1018720728840
- Burr, V., & King, N. (2012). 'You're in Cruel England Now!': Teaching research ethics through reality television. *Psychology Learning & Teaching*, 11, 22–29. doi:10.2304/plat.2012.11.1.22
- Cabral-Cardoso, C. (2004). Ethical misconduct in the business school: A case of plagiarism that turned bitter. *Journal of Business Ethics*, 49(1), 75–89. doi:10.1023/B:BUSI.0000013864.76547.d5
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3–7.
- Clarkeburn, H. (2002a). A test for ethical sensitivity in science. *Journal of Moral Education*, 31, 439–453. doi:10.1080/0305724022000029662
- Clarkeburn, H. (2002b). The aims and practice of ethics education in an undergraduate curriculum: Reasons for choosing a skills approach. *Journal of Further and Higher Education*, 26, 307–315. doi:10.1080/0309877022000021711
- Council of Europe. (2014). *How to protect whistleblowers*, Retrieved May 5, 2015 from http://www.coe.int/t/dghl/standardsetting/cdcj/Whistleblowers/protecting_whistleblowers_en.asp
- East, J., & Donnelly, L. (2012). Taking responsibility for academic integrity: A collaborative teaching and learning design. *Journal of University Teaching & Learning Practice*, 9(3), Retrieved from <http://ro.uow.edu.au/jutlp/vol9/iss3/2>
- European Science Foundation. (2011). *The European Code of Conduct for Research Integrity*, Retrieved from http://www.esf.org/fileadmin/Public_documents/Publications/Code_Conduct_ResearchIntegrity.pdf
- Fielden, K., & Joyce, D. (2008). An analysis of published research on academic integrity. *International Journal for Educational Integrity*, 4(2), 4–24.
- Finnish Advisory Board on Research Integrity. (2012). *Responsible conduct of research and procedures for handling allegations of misconduct in Finland*, Retrieved February 12, 2014 from http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf
- Fisher, C. B., Fried, A. L., & Feldman, L. G. (2009). Graduate socialization in the responsible conduct of research: A national survey on the research ethics training experiences of psychology doctoral students. *Ethics & Behavior*, 19, 496–518. doi:10.1080/10508420903275283
- Fisher, C. B., & Kuther, T. L. (1997). Integrating research ethics into the introductory psychology course curriculum. *Teaching of Psychology*, 24(3), 172–175. doi:10.1207/s15328023top2403_4
- Godecharle, S., Nemery, B., & Dierickx, K. (2013). Guidance on research integrity: No union in Europe. *The Lancet*, 381, 1097–1098 + Appendix 6 p. doi:10.1016/S0140-6736(13)60759-X
- Goodyear, R. K., Crego, C. A., & Johnston, M. W. (1992). Ethical issues in the supervision of student research: A study of critical incidents. *Professional Psychology: Research and Practice*, 23, 203–210. doi:10.1037/0735-7028.23.3.203
- Gray, P. W., & Jordan, S. R. (2012). Supervisors and academic integrity: Supervisors as exemplars and mentors. *Journal of Academic Ethics*, 10, 299–311. doi:10.1007/s10805-012-9155-6
- Gynnild, V., & Gotschalk, P. (2008). Promoting academic integrity at a Midwestern University: Critical review and current challenges. *International Journal for Educational Integrity*, 4, 41–59.

- Harris, N. F., & Bastedo, M. N. (2011). Corruption at the top. Ethical dilemmas in college and university governance. In T. Bertram Gallant (Ed.), *Creating the ethical academy. A systems approach to understanding misconduct and empowering change in higher education* (pp. 115–132). New York, NY: Routledge.
- Haydon, G. (2006). *Education, philosophy and the ethical environment*. London: Routledge.
- Honig, B., & Bedi, A. (2012). The fox in the hen house: A critical examination of plagiarism among members of the academy of management. *Academy of Management Learning & Education*, 11(1), 101–123. doi:10.5465/aml.2010.0084
- Ison, D. (2012). Plagiarism among dissertations: Prevalence at online institutions. *Journal of Academic Ethics*, 10(3), 227–236. doi:10.1007/s10805-012-9165-4
- Jordan, S. R. (2013). Conceptual clarification and the task of improving research on academic ethics. *Journal of Academic Ethics*, 11, 243–256. doi:10.1007/s10805-013-9190-y
- Kezar, A. J., & Sam, C. (2011). Enacting transcendental leadership. Creating and supporting a more ethical campus. In T. Bertram Gallant (Ed.), *Creating the ethical academy. A systems approach to understanding misconduct and empowering change in higher education* (pp. 153–167). New York, NY: Routledge.
- Kitchener, K. S. (1992). Psychologist as teacher and mentor: Affirming ethical values throughout the curriculum. *Professional Psychology: Research and Practice*, 23, 190–195. doi:10.1037/0735-7028.23.3.190
- Lin, C.-H. S., & Wen, L.-Y. M. (2007). Academic dishonesty in higher education—A nationwide study in Taiwan. *Higher Education*, 54, 85–97. doi:10.1007/s10734-006-9047-z
- Löfström, E. (2012). Students' ethical awareness and conceptions of research ethics. *Ethics & Behavior*, 22(5), 349–361. doi:10.1080/10508422.2012.679136
- Löfström, E., & Pyhältö, K. (2012). The supervisory relationship as an arena for ethical problem-solving. *Education Research International*. Article ID 961505, 12 pp. <http://dx.doi.org/10.1155/2012/961505>
- Löfström, E., & Pyhältö, K. (2014). Ethical issues in doctoral supervision: The perspectives of PhD students in the natural and behavioral sciences. *Ethics & Behavior*, 24(3), 195–214. doi:10.1080/10508422.2013.830574
- Löfström, E., Trotman, T., Furnari, M., & Shephard, K. (in press). Who teaches academic integrity to our students and how do they do it? *Higher Education*. doi:10.1007/s10734-014-9784-3
- Macfarlane, B., Zhang, J., & Pun, A. (2014). Academic integrity: A review of the literature. *Studies in Higher Education*, 39(2), 339–358. doi:10.1080/03075079.2012.709495
- Martin, D. E. (2011, December 11). Whistle blowing, religiosity, spirituality and integrity: Understanding the impact of social dominance orientation and environmental context. *Journal of Moral Occupational Psychology*, Retrieved from Social Science Research Network SSRN <http://ssrn.com/abstract1970970>
- McCabe, D. L. (1993). Faculty responses to academic dishonesty: The influence of student honor codes. *Research in Higher Education*, 34, 647–658. doi:10.1007/BF00991924
- McCabe, D. L., Trevino, L. K., & Butterfield, K. D. (1999). Academic integrity in honor code and non-honor code environments: A qualitative investigation. *The Journal of Higher Education*, 70, 211–234.
- O'Leary, C., & Cotter, D. (2000). The ethics of final year accountancy students: An international comparison. *Managerial Auditing Journal*, 15(3), 108–115. doi:10.1108/02686900010319366
- Randall, K., Bender, D. G., & Montgomery, D. M. (2007). Determining the opinions of health sciences students and faculty regarding academic integrity. *International Journal for Educational Integrity*, 3(2), 27–40.
- Rose, M. R., & Fischer, K. (1998). Do authorship policies impact students' judgments of perceived wrongdoing? *Ethics & Behavior*, 8(1), 59–79. doi:10.1207/s15327019eb0801_5
- Sambunjak, D., Straus, S. E., & Marušić, A. (2006). Mentoring in academic medicine: A systematic review. *JAMA: Journal of the American Medical Association*, 296(9), 1103–1115. doi:10.1001/jama.296.9.1103
- Singapore Statement on Research Integrity. (2010, July 21-24). World Conference on Research Integrity. Singapore, Retrieved from <http://www.singaporestatement.org/statement.html>
- Sirin, S. R., Brabeck, M. M., Santiani, A., & Rogers-Serin, L. (2003). Validation of a measurement of ethical sensitivity and examination of the effects of previous multicultural and ethics courses on ethical sensitivity. *Ethics and Behavior*, 13(3), 221–235. doi:10.1207/S15327019EB1303_02

- Sutherland-Smith, W. (2014). Legality, quality assurance and learning: Competing discourses of plagiarism management in higher education. *Journal of Higher Education Policy and Management*, 36(1), 29–42. doi:10.1080/1360080X.2013.844666
- Sutton, A., & Taylor, D. (2011). Confusion about collusion: Working together and academic integrity. *Assessment & Evaluation in Higher Education*, 36(7), 831–841. doi:10.1080/02602938.2010.488797
- Thelin, J.R. (2004). *A history of American Higher education*. Baltimore, MD: The John Hopkins University Press.
- Tuononen, T., Parpala, A., & Lindblom-Yänne, S. (2015). *Students' experiences of generic skills development in relation to learning and the nature of work experience*. Unpublished manuscript.
- Trotman, T., Furnari, M., Löfström, E., & Shephard, K. (2013). *Developing a research instrument for academic integrity in higher education*. 6th Asia Pacific Conference on Educational Integrity (6APCEI), Macquarie University, Sydney, 2–4 October.
- True, G., Alexander, L. B., & Richman, K. A. (2011). Misbehaviors of front-line research personnel and the integrity of community-based research. *Journal of Empirical Research on Human Research Ethics: An International Journal*, 6, 3–12. doi:10.1525/jer.2011.6.2.3
- University of Auckland. (2014). *Academic integrity - info for students*, Retrieved from <https://www.auckland.ac.nz/en/about/learning-and-teaching/policies-guidelines-and-procedures/academic-integrity-info-for-students.html>
- University of Helsinki. (2011). *Rector's guidelines for handling cheating and plagiarism amongst students Rector's Decision 11 November, 2011*. Retrieved from <https://flamma.helsinki.fi/content/res/pri/HY277884>
- University of Helsinki. (2012). *Ethical Principles for Teaching and Studies at the University of Helsinki*. Retrieved from http://www.helsinki.fi/opetus/eettiset-periaatteet/hy_ep_flash/en/sourceCS3.swf
- University of Otago. (1994). *Responsible Practice in Research - Code of Conduct*. Retrieved from <http://www.otago.ac.nz/administration/policies/otago003211.html>.
- University of Otago. (2004). *Externally Funded Research Policy and Application Procedures*. Retrieved from <http://www.otago.ac.nz/administration/policies/otago003192.html>
- University of Otago. (2011). *Dishonest Practice Procedures*. Retrieved from <http://www.otago.ac.nz/administration/policies/otago003145.html>
- University of Otago. (2014). *Guidelines for teaching at Otago*. Retrieved from <http://www.otago.ac.nz/staff/otago027122.pdf>
- Wellman, N., & Fallon, J. (2012). Investigating academic malpractice within an MBA marketing module. *International Journal for Educational Integrity*, 8(1), 41–54.
- Williams, R. (2014, October 21). There's no fooling about impact. *Times Higher Education Supplement April 17*. Retrieved from <http://www.timeshighereducation.co.uk/story.aspx?storyCode=2012699>
- Zuccherro, R. A. (2008). Can psychology ethics effectively be integrated into introductory psychology? *Journal of Academic Ethics*, 6, 245–257. doi:10.1007/s10805-009-9070-7