Dealing with Plagiarism in a Complex Information Society

Debbie Wheeler and David Anderson
Debbie Wheeler is Chair of Education Programmes at Abu Dhabi Women's College, Higher Colleges of Technology, UAE. Her professional interests include the promotion of best practice in assessment, pre- and in-service teacher development, and the documentation of policies to best support effective teaching and learning. She started her career as a primary teacher in Australia and has worked in the UAE for over fifteen years.

David Anderson is an English Faculty member at Al Ain Women's College, Higher Colleges of Technology, UAE. He has worked in Spain, Kuwait and the UAE for over 20 years as a teacher, teacher trainer and materials developer. His main areas of interest include e-learning, the development of literacy skills, and the acquisition of vocabulary.
Plagiarism in Political Discourse

Politicians, more than anyone else, need to portray an image of integrity, honesty, and independent thought. Their election, their livelihood, and the fate of their constituents would seem to depend on it. Yet politicians commonly use speechwriters who have the specific task of conveying their thoughts, personality, and personal sincerity (see, for example, Philp, 2009). It may be argued that although politicians do not necessarily write the words themselves, they endorse the words they use. But what if the words themselves are not original? In one instance, the presidential candidate Barack Obama was confronted by the fact that some of his speeches had taken material from Deval Patrick, the Massachusetts Governor. Obama admitted he should have acknowledged his source:

I was on the stump. [Deval] had suggested that we use these lines and I thought they were good lines... I’m sure I should have -- didn’t this time... I really don’t think this is too big of a deal. (Obama, in Whitesides, 2008).

Plagiarism has been defined as “the unacknowledged use of someone else’s work... and passing it off as if it were one’s own” (Park, 2004, p. 292) and it is interesting to speculate whether such an excuse would be accepted from a student by an educational institution’s plagiarism committee.

Accusations of plagiarism in politics have been made before, of course, though the outcomes were often different, suggesting that a shift may be taking place in attitudes towards plagiarism in politics. In 1987, another presidential hopeful was forced to abandon his ambitions for high office largely because he had plagiarised a speech by the British politician Neil Kinnock and because of “a serious plagiarism incident” in his law school years (Sabato, 1998). Ironically, the candidate was none other than Joe Biden, the man chosen by Barack Obama to be his Vice President. In politics today, it seems as though plagiarism no longer signals the end of a career.

In contrast, students who are caught cheating or plagiarising can be subject to sanctions and consequences that are severely life-impacting, which in the UAE can include permanent exclusion from all tertiary education (see, for example, Higher Colleges of Technology, 2008). One question of fundamental concern that we must ask ourselves as tertiary-level educators is why college students, who have much less at stake, considerably less experience and knowledge and who do not use English as their first language, should be held to higher standards of responsibility in communication than those in the highest political offices? Yet, if we make allowances for students who are still learning to orientate themselves in academic discourse, what standards should be applied?

Plagiarism in a Complex Information Society

The concept of plagiarism is a relatively new cultural phenomenon. Greek philosophers regularly appropriated material from earlier works without compunction, and originality was considered less important than imitating, often orally, the great works of their predecessors (Lackie & D’Angelo-Long, 2004, p. 37). All the way through the eighteenth and early nineteenth centuries, the study of rhetoric rather than written language was often the norm, with students required to give public speeches to assembled faculty. Only the subsequent move towards written assignments brought with it new perceptions of student plagiarism (Simmons, 1999, p. 41). Around the same time, in the earlier part of the twentieth century, the formalization of citation styles from organizations such as the American Psychological Association (APA) marked a desire to standardise academic writing and provide a model for ethically quoting the work of others (Simmons, p. 42).

With the rise of the information society and electronic media, another cultural shift seems to be
underway. There have been recent suggestions that plagiarism is becoming more prevalent and much of the blame has been placed on “nearly universal access to the Internet” (Scanlon & Neumann, 2002, p. 374). Park (2004) refers to the ease of “copying... in a digital world of computers, word processing, electronic sources and the Internet” (p 293). However, the explosion of electronic sources of information has not just made copying easier, it has also made it much more central to our students’ cultural and social experiences. Students going into tertiary education have grown up with the Internet and are at home with downloading ‘free’ films, sharing music and modifying and emailing all kinds of material taken from the web. They have developed highly skilled ways of conducting non-academic research using services such as search engines, social networking sites, podcasts, RSS feeds, discussion boards etc. with hyperlinks allowing them to jump from site to site as though the Internet were a single unified source, and with copying and pasting a mainstay of interaction. They take it for granted that a pop star such as will.i.am can pick up and rework virtually the entire content of a political speech, and turn it into the award winning song and music video “Yes we can,” apparently without Obama’s knowledge or consent (“New celeb-filled music video for Obama," 2008). They are not surprised when this video is then embedded in countless webpages, with the lyrics of the song posted on music sites without any attribution of the original source (see, for example, LyricsReg, n.d.). This intertextuality is a perfect example of the “postmodern, self-cannibalizing popular culture” (Bowman, 2004, p.8) that our students now engage with on a daily basis. Students may well bring to the classroom very different ideas from their teachers about what constitutes fair use. Indeed, one study of 2,600 tertiary level students in the UAE found that just over 40% considered cutting and pasting from the Internet as either trivial cheating or not cheating at all. The attitudes of UAE students are similar to those of other students around the world (Croucher, 2009).

Some theorists have gone a step further, and argue that as the new media become more interactive and collaborative, it calls into question the whole idea of a “creative, original, individual who, as an autonomous scholar, presents his/her work to the public in his/her own name” (Scollon, 1995, p. 1). The multiple contributors to Wikipedia pages is a clear example of how a collaborative process undermines our sense of authorship. In addition, the notion of what constitutes ‘fair use’ is changing quickly. This is exemplified by the open source movement where material can be downloaded, modified and shared with minimal and strictly controlled author’s rights. (See, for example, Open Source Initiative, n.d.). As Blum (2009) notes, the “rules about intellectual property are in flux.”

Where does this leave educators? Has plagiarism become an irrelevant concept, too outdated in its definition to be of use in the production of educated professionals ready to take their place in our post-modern society? Do we have to accept Johnson’s (2007) argument that in the digital age, writing an original essay outside of class for assessment purposes is no longer viable in its current form because of the ease of copying from the Internet? Do we have to agree with him when he says such tasks are no longer even relevant because they fail to reflect the modern workplace? As Johnson argues:

My transfer from education to the world of business has reminded me just how important it is to be able to synthesize content from multiple sources, put structure around it and edit it into a coherent, single-voiced whole. Students who are able to create convincing amalgamations have gained a valuable business skill. Unfortunately, most schools fail to recognize that any skills have been used at all, and an entire paper can be discarded because of a few lines repeated from another source without quotation marks.
Plagiarism in Education

Plagiarism in education seems to operate under a very different set of rules from the pragmatic fields of politics or business and can create emotional responses that deploy highly-charged metaphors such as *The Plagiarism Plague* (Bowman, 2004), or "Winning Hearts and Minds in War on Plagiarism" (Jaschik, 2008). In education, plagiarism is "seen as a transgression against our common intellectual values, carrying justifiably bad consequences for those guilty of the practice" (Isserman, 2003). Why is it generally accepted that politicians can use ghostwriters, but that students cannot, even if the stakes for the students are much lower? The critical issue for education is that plagiarism "circumvents the learning process" (Spencer, 2004, p.16). The process of analysing and synthesizing ideas, and reformulating them in writing, is seen as central to learning. Only by ensuring that students struggle to assimilate material and develop their own voice do students go beyond surface information and develop higher order thinking skills. As Isserman (2003) notes:

ownership over the words you use... is really at the heart of the learning process. You can read a dozen books about the cold war, but if you can't explain what you have learned to someone else in your own words, no real learning has taken place... and you will have made no progress whatsoever toward realizing the central goal of a liberal-arts education: the ability to think for yourself.

This struggle for intellectual development is not easy, which is precisely the reason that makes plagiarism attractive for some students. In most cases teachers are not concerned about literary theft, but that their students are missing out on opportunities for learning because they are failing to engage with the material in a meaningful way. Plagiarism is therefore “denying them the opportunity to learn lessons, improve their study skills, and improve their knowledge and understanding” (Lancaster University, 2009, p. 3).

If plagiarism is especially serious in education because it is an obstacle to learning, then we should deal with instances of plagiarism primarily from an educational perspective rather than the punitive one. Students need to learn the importance of academic integrity, and understand that it is not just a hoop to be jumped through, but is integral to intellectual and personal growth. Clearly this learning process cannot be instantaneous, and allowances should be made as students develop. However, this does not mean that severe penalties should be removed from the process entirely as there will always be students who refuse or are unable to meet appropriate standards.

Factors Influencing the Incidence of Plagiarism

Individual, pedagogical, and institutional factors can all influence the incidence of plagiarism. Students themselves can be impacted by a wide range of factors including their educational conditioning, cultural background, motivation, language skill, peer pressure, gender, issues with time management, ability and even the subject being studied (Roig, 1997).

If the tertiary experience is vastly different to students’ previous educational experience, the motivation for plagiarism again increases. It is likely, for example, that the students’ primary and secondary schooling was characterised by rote learning and the quest for a single correct answer, non-transparent and poorly conceived assessment practices, and vast social inequities within the student base, and between students and their often socially and economically disadvantaged teachers. Norms, expectations, and demands learned in this context can be difficult to dislodge in subsequent institutions which place a premium on the exploration of problems and solutions, independent and critical thinking skills, and academic integrity. If
plagiarism is not defined or academic processes made explicit, then such students will find it impossible to reach the standards that are suddenly and (to them) inexplicably imposed on them.

Pedagogical approaches may also contribute to the prevalence of plagiarism. Current methodologies place much more emphasis on collaboration and group work, with a greater weight given to out-of-class projects and portfolios at the expense of formal exams. The result is that the line between collaboration and cheating during assessed tasks is blurred, and if this is not explicitly dealt with by assessors, it will inevitably result in misunderstandings as to what is acceptable. Also, students are more likely to justify cheating if the coursework or assignments they were given were too hard, poorly scaffolded or based on unreasonable expectations of their abilities (Naidoo, 2008), and plagiarism will be made easier if the assignments are not constructed carefully so that stock answers cannot be copied from the Internet (Wood, 2004).

However, the institutional context plays perhaps the most critical role. For example, unclear and uncommunicated institutional policies with vague definitions of plagiarism can affect the incidence of plagiarism, as can the application of those policies (McCabe, Treviño & Butterfield, 2002). Some aspects of an organization may unwittingly encourage plagiarism. For example, in contrast to schools, tertiary education institutions in the UAE do not typically award top grades to large numbers of students, and there is evidence to suggest that students justify using ghostwriters in such an environment because they believe they deserve better grades (Croucher, 2009).

An often overlooked but crucial aspect of deterring and detecting plagiarism is the application of institutional policies by teachers. One survey of 800 American academics at 16 institutions found that 40% never reported incidents of plagiarism while a further 54% did so only seldomly, even though the evidence suggested they must have received plagiarised work (McCabe, 1993 in Schneider, 1999). There are many reasons why teachers may be reluctant to report plagiarism. Teachers may feel the potential penalties for students are too high (Auer & Krupar, 2001). They may also be wary of making false accusations which potentially undermine their own professional status. Some teachers object to taking on the role of detective or enforcer as it undermines the mentor-student relationship (Schneider, 1999; Park, 2004) while others may not have the time to make an extra effort to uncover plagiarism and follow it up (Park, 2004). It may also be that some teachers, especially teachers of content subjects where the focus is less on form and more on ideas, may not have sufficiently developed skills to detect plagiarism. Hyland (2001) found that even teachers who detect plagiarism may use indirect feedback when dealing with plagiarism (for example, comments in the margins such as “Are these your own words?”) which can lead to miscommunication with the student about what is acceptable. With so many factors at play, the responsibilities of teachers must be clearly codified if any institutional initiative is to have any success.

**Plagiarism and ESOL/EFL**

ESOL and EFL contexts may be more prone to infringements of academic integrity because students lack the English skills to understand the coursework and so may feel that plagiarism offers the only solution (Hyland, 2001; Liu, 2005). Moreover, the cultural conditioning of ESL and EFL students has been cited as another contributing factor. Moder (1995 in Lackie & D’Angelo-Long, 2004, p. 38) suggests that some societies, including those in the Middle East, “value memorization and imitation as the mark of an educated person” which may mean that plagiarism is viewed as being less significant. Liu (2005) disagrees with the notion of cultural conditioning, however, claiming that “it is based on incorrect information and is presented often via unwarranted jumps in reasoning and conflation of separate issues” (Liu, p. 239). More pertinently, perhaps, she goes on to argue that:
even if we concede that such cultural conditioning indeed exists to some extent, we still cannot say for sure that it is the main reason that ESOL students plagiarize. There are many other factors that may motivate ESOL students from many L1 backgrounds to plagiarize, including a lack of adequate proficiency, lack of task specific writing skills, and of course, the urge to cheat.

ESOL students, then, whether or not cultural conditioning is accepted as an underlying factor in plagiarism, may still have greater motivation than their first language counterparts to take and use the ideas and words of others in their own assignments. Ironically, plagiarism by ESOL students is also far more likely to be detected because of more prominent differences in language level and tone between copied and original work.

Degrees of Plagiarism

Intuitively, plagiarism varies in its severity in a way that cheating (e.g. using crib sheets or having someone else take a test for you) does not. It can consist of minor lapses, for example when original material is poorly paraphrased but the source, is acknowledged, through deliberately copying parts of a text without citing the source to submitting work from an online paper mill (Roig, 1997).

Critical factors in determining the severity of the plagiarism include the intention behind the plagiarism (was it deliberate or accidental?), the amount of material that has been plagiarised, the inclusion of the source in the list of references, the degree to which the plagiarised material differs from the source (an indication at an attempt to paraphrase), the time the student has spent in tertiary education, and whether it is the first, second or subsequent occurrence.

Given the wide variation in the seriousness of plagiarism and the developmental process students must undergo to assimilate the norms of academic writing, it is clear that the appearance of plagiarised material is not always a deliberate attempt to cheat. For example, students are often poor at paraphrasing and may not be fully aware that this could be construed as plagiarism. Roig (1999) gave English-speaking undergraduate students a two-sentence paragraph to paraphrase and found that between 41% and 68% of the responses contained strings of at least five words or more copied from the original. These results clearly back up the claim that plagiarism may indicate a deficit in appropriate skills and not intentional academic dishonesty.

Towards an Institutional Response to Plagiarism

In many educational institutions, plagiarism is seen largely as a teacher/student problem. If plagiarism is detected, then the teacher makes a decision as to whether to escalate the case for possible punitive action. The plagiarism is seen either as morally wrong or as a ‘crime’ - the breaking of a rule that has inevitable consequences (Blum, 2009).

Unfortunately, dealing with plagiarism in this way can result in decisions which are reactive, emotive, and which are made informally on an ad hoc basis, thus inviting inequity and inconsistency. When the focus is directed towards punishment, there may be little maturation in terms of academic integrity for the student concerned, or for those who watch their classmate’s fate from the sidelines.

Academic endeavour must take place within an institutional culture that routinely recognises and reinforces the value of academic integrity so that all stakeholders are obliged to proactively follow and uphold best practice in order to reduce the impact of the contributing factors
discussed above. This requires the establishment of an institutional response to plagiarism that is comprehensive, appropriate, fair, developmental, transparent, and educative.

Park (2004) describes such an institutional framework for dealing with plagiarism that was developed by a working party at Lancaster University in consultation with staff and with reference to experience and the literature:

> The working party sought to move the plagiarism discourse beyond just detection and punishment and to situate and embed it in a cohesive framework that tackles the root causes as well as the symptoms of plagiarism as a family of behaviours. (p. 294)

The key elements underpinning this framework were consistency and transparency. These were ensured by the explicit codification of stakeholder responsibilities, procedures and penalties. In order for such a framework to be implemented effectively, Park (2004) noted that "all stakeholders within the institution must understand and appreciate why the framework is necessary and how it protects their own interests" (p. 296).

**A Case Study**

Park (2004) nominated a number of central pillars that lend validity and effectiveness to any such institutional framework. These included transparency, ownership by stakeholders, student engagement, academic integrity, framing the initiative to ensure compatibility with the culture of the institution, focus on prevention and deterrence, and the supportive and developmental nature of the framework (pp. 295-299). These pillars provide an excellent reference point for the approach taken in one department in a college in the Emirates, and allows us to examine the viability and efficacy of such a framework for the local context.

The Education Department at Abu Dhabi Women’s College (ADWC) has addressed its concerns with academic honesty in a concerted, collaborative, and multi-faceted fashion. As teacher educators, the faculty in this department are intent on producing future academics. Much like politicians, words, information, and the generation of ideas are the very foundation of our professional lives, so we regard it as essential that the ‘rules’ of using these appropriately are disseminated, understood, and followed at all times by all of our students. To this end, we have established and adhere to a set of policies and practices at all levels that support and facilitate academic honesty.

**Institutional/Departmental Level**

The Higher Colleges of Technology (HCT), of which ADWC is only one of sixteen, institutionally mandates the prevention and sanctioning of plagiarism and related offences. Consequences of infringements of these rules are outlined in official policies, Student Handbooks (see, for example, Higher Colleges of Technology, 2008), contracts signed by students at the commencement of their studies, and reinforced by administrative staff and faculty at every student meeting and examination session held throughout the student’s academic career at HCT.

From these guidelines, the Education Division throughout the colleges has documented standards and procedures that address academic honesty in its Assessment Handbooks – one that is distributed to all Education students and the other, more comprehensive and specific, that is used by all Education faculty. This shared written documentation enables best practice in assessment to be disseminated and followed, provides the underlying philosophy and approach for the division as a whole, and addresses academic honesty both directly and
indirectly to better support student writing and make plagiarism a less viable or attractive option. The Assessment Handbooks reflect the developmental curricular approach of the Division as a whole, and so specify the type, nature, and expectations for assessments at each level to scaffold the students’ ability to produce increasingly sophisticated and original work. Ensuring that requirements are reasonable and documented minimises the students’ need to seek help through illegitimate means.

These handbooks are the basis of communication within the ADWC Education Department on all matters regarding assessment and have served to ensure a common approach and understanding. Insights gained by instructors in their daily interactions with students and their submissions inevitably reveal general difficulties facing students, which are then examined in regular formal and informal meetings to brainstorm and implement further strategies that may be useful. The ongoing concern at faculty level with issues of academic honesty is mirrored in the systematic recycling of warnings, information, and explicit instructions to students.

As a department, the theft or misappropriation of ideas and words has been, and continues to be, addressed as professionally offensive and inappropriate. Initiatives suggested by Education Department faculty as well as colleagues in other departments and colleges are pursued vigorously. One recent example has been the provision of workshops by library staff on research skills and academic procedures.

The plagiarism detection software, Turnitin, was originally adopted by the department as both a defence against plagiarism and a tool to help students protect themselves against accidental plagiarism. This proved to be very effective, but unfortunately access to this subsequently became unavailable. Now, suspicious text samples are input into search engines and all assignments are run through SafeAssign, a plagiarism checker in Blackboard (the online course management system). These have proved to be acceptable alternatives. As Braumoeller and Gaines (2001) found in their study, “the deterrent effects of actually checking for plagiarism are quite impressive” (p. 836).

The departmental approach has included a series of mandatory workshops and masterclasses on academic writing and plagiarism for all students in slightly altered learning contexts designed to motivate, encourage participation, and focus attention.

It should be noted that the relatively small size of the department (one chair, six faculty and fewer than eighty students) makes shared understandings, uniform dissemination of information, and infraction detection much easier and more likely than in a bigger department where students are not familiar to every teacher.

Course Level

Academic writing skills are an important component of all Education courses. Referencing skills are taught explicitly in a specific course during the students’ first semester, and then constantly reinforced and recycled throughout the programme.

The Education programmes at the HCT are based on reflective practice. This means that assignments are contextualised, and require the application rather than the regurgitation of theory, so copying from previously submitted work or in any way buying or commissioning a paper cannot be so easily accomplished as theory has to fit the student’s individual circumstances.

In addition, the student’s right to submit and receive feedback on a first draft of every paper (Assessment Handbook, 2009, p. 7) allows plagiarism, deliberate or accidental, to be detected.
and remediated at an earlier stage before punishment becomes the only option. The feedback and scaffolding policy (pp. 53-55), which outlines the form and scope of feedback to be given, draws instructor attention to both macro and micro features of the submission, so any attempt to use words or ideas from an external source should be revealed at least a week before final submission.

All students submitting assignments in the Education Division are required to sign a declaration on their cover page that the work is entirely their own and all sources have been acknowledged (Assessment Handbook, 2009, p. 47). This provides a final reminder that academic honesty is expected and will be monitored.

Faculty Responsibilities and Input

All faculty member in the Education Department, regardless of their course allocation, considers themselves teachers of English. This is not only because we each have ESL teaching qualifications and experience (obviously an advantage), but also because we recognise the importance of language as the vehicle for idea generation and transmission. Language is inseparable from the content area in which those ideas are conceived and manipulated. This can be a very different orientation to that of colleagues in other departments whose subject area specialisation takes precedence.

Our more holistic approach means that we explicitly teach both content and the language elements with which to express that content to students who may be struggling with the unfamiliarity of both. It also means that we take our role as defenders of academic integrity very seriously and vigilantly monitor and check student output. As professional ESL teacher educators, we strive to be models of effective language use as well as successful proponents of academic scholarship, so ongoing instruction in both is a routine aspect of teaching and learning in the department. This increased student awareness of appropriate academic writing processes reduces their motivation to misappropriate text written by others.

The cultural and social aspects of plagiarism are also given attention by faculty. In a society that places less value on individuality than it does on cooperation and social cohesion, it is important for students to understand that they have not only the right, but the responsibility, to turn down requests for assistance from peers. Faculty not only explain this, but also explain to students how to respond assertively with friends or relatives asking for inappropriate help. Without this, no amount of education or punishment can ever be successful.

Student Involvement

Education students are required to be active participants in their own learning. Because all assessment processes are documented and transparent, they have the ability to question and ask for clarification on any aspect that they do not understand. All expectations or consequences are addressed in multiple ways, so ignorance is no defence for malpractice. Submissions of first drafts are perhaps the most critical aspect for students. Although these are universally permitted and scheduled, they are never awarded a mark and are not always actually demanded, so it is up to the student to take advantage of their right to pre-submission feedback.

An Appropriate Framework?

The Education Department at ADWC values academic honesty very highly and has organised its procedures and practices accordingly. The very infrequent occurrence of plagiarism is testimony to the effectiveness of:
1. proactive strategizing,
2. clear documentation,
3. reasonable and appropriate expectations,
4. awareness raising,
5. sustained faculty vigilance and involvement,
6. support for the development of student skills and cognitive growth,
7. decreased student opportunity and motivation to cheat,
8. the pervasive sense of professional identity and responsibility that characterise departmental efforts on this issue at all levels.

The work done in this department is thus an arguably successful attempt to “devise a student plagiarism framework that best suits [our] own culture and circumstances” and which is “integrated and cohesive,… transparent and applied consistently” (Park, 2004, p. 304). The author’s central pillars of transparency, ownership, academic integrity, framing, focus, and a supportive, developmental approach can be recognised in the procedures and practices outlined above. The most significant work yet to be undertaken involves the categorisation of plagiarism offences into levels of seriousness and willfulness so that sanctions and penalties can be appropriately applied (Park, p. 301). This would require a major change in institutional policies, however, so is unachievable at this time. The departmental framework, now well-established and maintained, is an appropriate fit for the less specific but overriding institutional demands.

Conclusion

The Internet-savvy students who arrive at tertiary level institutions today have fundamentally different attitudes to ownership, intellectual property and the electronic transmission of knowledge. In a world where politicians can ‘borrow’ sound bites that have already proved successful, where downloading and modification is ubiquitous, and where the notion of an ‘expert’ is being undermined by online social networking, our definition and approach to plagiarism must also change. However, this must be done without losing the insistence on the intellectual struggle with ideas which is the hallmark of true education.

Institutions must therefore redouble their efforts to provide a framework within which issues of academic integrity can be explored and addressed. Academic integrity is not something innate, it is something that needs to be learned. Efforts to deal with plagiarism must be systematic, equitable, process-oriented and pervasive at all institutional levels otherwise there is a risk that punitive measures may seem unpredictable, and so will not send a clear message to stakeholders. If this is the case, students are even less likely to appreciate the centrality of academic integrity in the educational context.

It is our job as educators to give students, particularly at the undergraduate level, the opportunity to learn the skills that they are lacking, and to encourage them to take on an ethical stance so that they can be assimilated into the academic community of practice. As the case study of the ADWC Education Department has shown, with this challenge comes an opportunity to continually review our methodology, our assessment strategies and the kinds of work we expect our students to produce.
References


Roig, M. (1997). Can undergraduate students determine whether text has been plagiarized? *The Psychological Record, 47*(1), 113-123.


