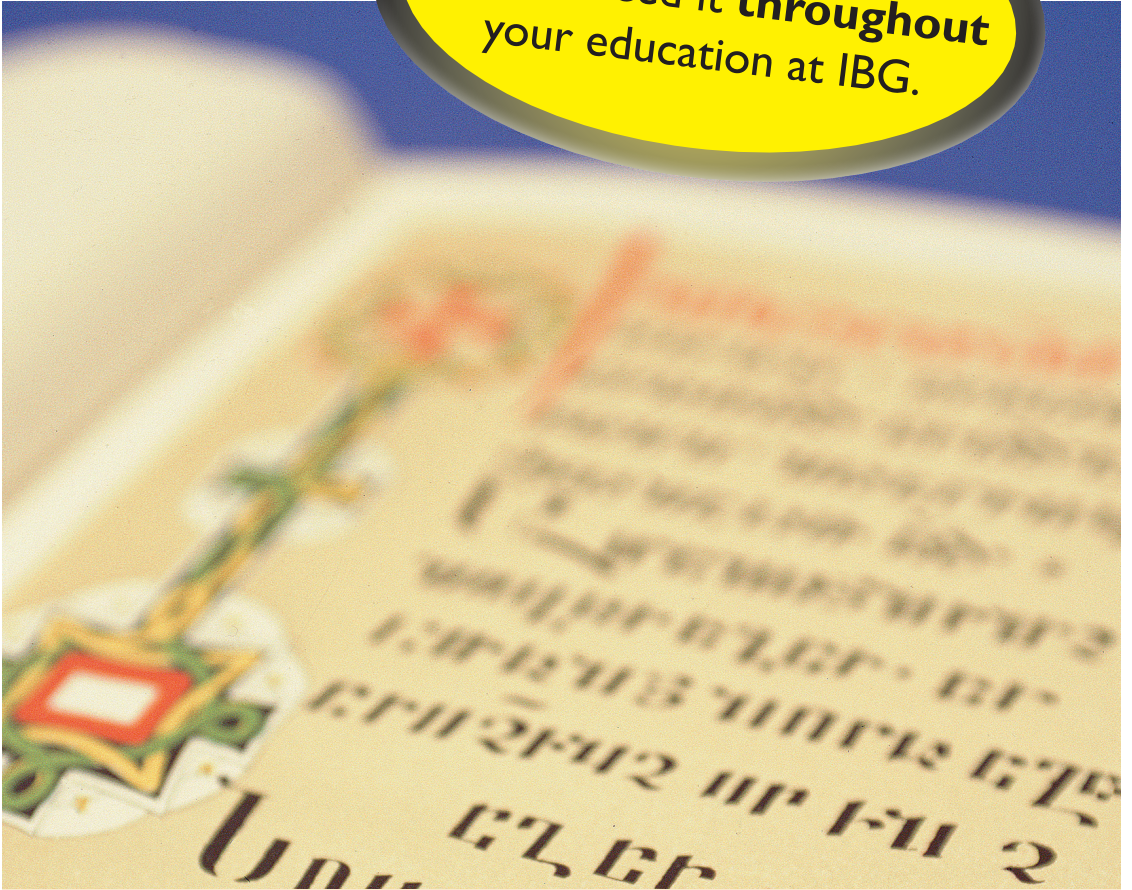




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How to avoid plagiarism

Biology Education Centre

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How to use scientific sources

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All scientific work is based upon the results of previous studies. It is necessary to refer to other studies in scientific texts in order to place new scientific work into a larger context and to relate the work to other studies. References are also used to define methods and concepts.

It is essential that the reference citation enables the reader to find the quoted source. The author therefore must include all necessary information. The author also must make clear what parts are his or her original work and what parts come from work by others. You must never “present work of other people as if it were your own work [quote translated]” (Association of Swedish Higher Education 1997). Presenting the work of others as if it was your own is called plagiarism. Regardless of your command of the language in which you are writing you must use your own words and present only the results or ideas of others, not their texts.

Guidelines for referencing, and general guidelines for writing reports can be found in the document *Presenting Science* (Långström 2016).

Plagiarism

Plagiarism can be defined as *copying without correct referencing*. If this is done with an intent to mislead in a piece of work that you submit to a teacher for evaluation, you are cheating. Plagiarism and cheating are serious offences since they undermine the credibility and quality of your university education. These offenses also create unfair circumstances for honest students who follow the rules. Plagiarism therefore is taken very seriously at the Uppsala University. According to 10th chapter 1§ in the Higher Education Ordinance (Svensk författningssamling 2009): disciplinary actions may be taken “against students who [...] try to mislead at exams or other instances where study results are to be assessed [quote translated].”

The procedure when plagiarism is suspected is shown in fig 1. The responsible teacher will inform the student and the IBG study director. If the text is plagiarised, the work is failed. The responsible teacher and the study director then investigate whether or not the plagiarism was intentional. If they suspect the student has cheated, the study director will make a written report to the Vice Chancellor of the University. This results in the case being submitted to the Uppsala University Disciplinary Committee. The Disciplinary Committee, chaired by the Vice Chancellor of the university, then investigates the seriousness of the incident and decides whether disciplinary measures should be taken. Disciplinary measures could be either a warning or a suspension for a set period of time. The student may contact the University Betygsombudsman or the Student Union’s Studentombud for advice and assistance at all stages of this procedure. Even if the plagiarism is not considered cheating, and therefore not reported to the Disciplinary Committee, having your report or exam failed usually will set you back several months in your studies.

The Urkund service has been developed to discover and thereby prevent plagiarism. All major written assignments are submitted through Urkund, that checks them against a vast database consisting of sources from the internet: companies, universities and other web sites. See the separate file Information about Urkund, available at the IBG web site (www.ibg.uu.se/student/).

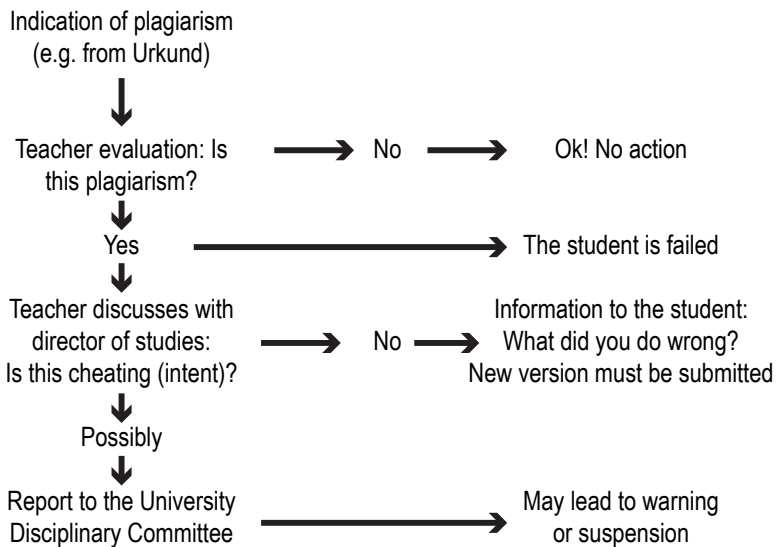


Fig 1. What happens if plagiarism is suspected?

Collaboration is not cheating

At universities in Sweden, students, teachers and researchers are expected to collaborate to exchange ideas, knowledge and experiences. This is essential for optimal utilisation of your study time at the university. However, when you are writing a report that will be assessed and graded by a teacher, the whole work must be yours, written with your own words and containing your own ideas, conclusions and interpretations. If you use other peoples' words or ideas, you have to state this clearly, and indicate their source and extent. If you use a graph or a figure from a publication you must indicate its source and write your own explanatory text. If your report is to be made public (as for all degree project reports, for instance), you must have permission from the copyright holder (usually the publisher, not the author) to reproduce the figure.

None of this prevents you from letting fellow students read and comment your work and suggest changes before you hand them in. It is easy to avoid plagiarism and still be good friend and fellow student. All you need to do is to make sure that you put your own original work and thoughts into each assignment that you submit for assessment.

The use and misuse of an original source

The following text is slightly modified from the original of Niva (2003). Fig 2 shows the plant discussed.

About 70% of the plant species in the temperate zone are characterized by clonal growth (Salisbury 1942). Clonal plants also dominate severely stressed habitats like the Arctic and Subarctic (Jónsdóttir et al. 1996). Since they are so dominant, it is of great importance that we gain knowledge of the processes that determine their growth, particularly as they significantly affect the structure and composition of the vegetation. Many weeds are clonal, and so are many of the cattle's fodder plants; i.e., it is also of great economic importance that we increase our knowledge concerning clonal plants (van Goenendael and de Kroon 1990).

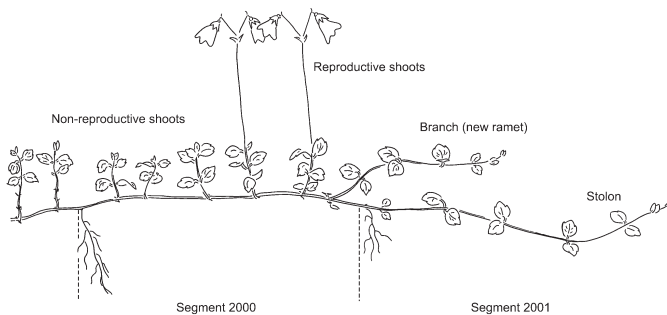


Fig 2. Segments of the clonal plant twinflower, *Linnaea borealis*. Drawing by Brita M. Svensson.

The use of this text in the student report below is a clear example of plagiarism. If this text would be submitted for evaluation and grading, it could be seen as an attempt to cheat. Very few changes have been made, the text is virtually identical to the original source, and no reference to the original source has been given.

About 70% of the plants in the temperate zone use clonal growth. These plants completely dominate habitats like the Arctic and Subarctic. Since they are so dominant in many areas, it is of great importance that we gain knowledge of the processes that determine their growth, as they significantly affect the structure and composition of the vegetation. Many weeds are clonal, and so are many of the cattle's fodder plants, and it is also of great economic importance that we increase our knowledge concerning clonal plants.

Below is also an example of plagiarism. Although there is a reference to the original source, it is never explained that in fact almost the whole text was copied. Thus, this is also suspected cheating.

About 70% of the plant species in the temperate zone are characterized by clonal growth (Niva 2003). Clonal plants also dominate severely stressed habitats like the Arctic and Subarctic. Since they are so dominant, it is of great importance that we gain knowledge of the processes that determine their growth, particularly as they significantly affect the structure and composition of the vegetation. Many weeds are clonal, and so are many of the cattle's fodder plants; i.e., it is also of great economic importance that we increase our knowledge concerning clonal plants.

The next example is not plagiarism because the author has made the origin of the text clear by the use of quotation marks. Although the student has not cheated in this case, he or she can not expect to receive a passing grade for this type of copy-and-paste work because it shows no evidence of original thought or understanding of the subject.

Clonal growth is common among plants. Niva (2003) stated that "about 70% of the plant species in the temperate zone are characterized by clonal growth. Clonal plants also dominate severely stressed habitats like the Arctic and Sub-

arctic. Since they are so dominant, it is of great importance that we gain knowledge of the processes that determine their growth, particularly as they significantly affect the structure and composition of the vegetation. Many weeds are clonal, and so are many of the cattle's fodder plants; i.e., it is also of great economic importance that we increase our knowledge concerning clonal plants."

The final example is one where the author uses both Niva's work and other references correctly, showing clearly what the sources are for the different statements.

Asexual reproduction or clonal growth, is common especially in fungi and plants, but present also in animals. The offspring from clonal organisms is genetically identical to the mother (Niva 2003, Campbell & Reece 2005).

In most environments clonal plants are very important for different processes in the communities and ecosystems (Oborny & Bartha 1995). Their major importance is in cold, wet or dark regions (Klimeš et al., 1997), but they are also important in grazing fields. Thus, it is very important that we understand how clonal plants function (Niva 2003, Tolvanen et al., 2004).

Other information on plagiarism

Many web sites from Swedish institutes of higher education feature similar guides to what constitutes plagiarism and how to use scientific sources, the most thorough one probably being that from KTH (KTH Royal Institute of Technology 2010). Frick (2004) has developed a web site with extensive descriptions of what is plagiarism and what isn't, and together with some colleagues (Boling *et al.*, 2005) constructed a tutorial with exercises to help students recognize and avoid plagiarism. Also the guide from Purdue University (Purdue University 2010) is quite useful.

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