

Dilemmas and Solutions in the Application of the Copyright Fair Use System in the Context of Digital Education

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Abstract: Network and multimedia technologies are employed in digital education to distribute teaching materials, and with the resolution of problems in traditional classrooms, physical distance has also been overcome. Therefore, there are many problems with the application of the fair use system for copyright, such as the lack of time and place restrictions, the difficulty of identifying temporary copying, and disagreements over the amount to be quoted. With the addition of closed-list regulations and the expansion of the licensing system, the old rules of fair use are no longer suitable for the new forms of use in digital education. Therefore, the dynamic balancing test should be based on the purpose of use and the nature of the work, and the functional integration of statutory licensing and fair use should be achieved; coordinated norms need to be established among technological protection measures and fair-use exceptions, and thus the institutional foundation for balancing copyright interests in the digital education environment will be reformed.

Keywords: Digital education, Copyright, fair use, Temporary copying, Transformative use, Statutory licensing, Technological protection measures

Introduction

Digital education is now a way to spread knowledge, and the information-technology environment it is based on has changed the basic mode of work creation, dissemination and application. To protect the interests of copyright holders and at the same time allow some freedom for the public to use the works in education, the fair use rule will also be applied in traditional schools. With the development of digital education, problems in the application of the fair use system have been becoming more serious. The above problems will affect the normal operation of digital teaching activities and present new challenges to the institutional flexibility of copyright law. Research on the application obstacles, normative causes and adjustment paths of the fair use system in the field of digital education has considerable theoretical and institutional value in strengthening the copyright exception system and ensuring the normative operation of digital education. We need to study the structural conflict between digital technology and the current legal system in an organised way from a normative perspective, and thus provide a theoretical basis for the modernisation of the fair use system.

1. Obstacles to the Application of the Fair Use System in the Field of Digital Education

1.1 Dissolution of the Temporal and Spatial Boundaries of Fair Use with the Dissemination of Digital Media

Digital education is based on networks and multimedia resources, so the collection and distribution of teaching materials no longer need to be done in traditional classrooms. Traditionally, the application of the fair use system in schools has been limited to "classroom teaching", and teachers can only use other people's works in certain places and for a small number of students. Digital media are instantaneous and cross-regional, so after a work has been uploaded, it can be viewed by an unknown number of people across the country and thus loses its original spatial enclosure. It is not easy to meet the conditions of "limited reproduction" and "temporary storage" in the fair use clause due to the technical nature of cloud storage and streaming media transmission. After the educational institution has uploaded the course materials to the learning management system, students can view them at any time and in any place. The length of time such material has been available is not considered to be fair

use.

Continuous recording and digital dissemination have shortened the term of the fair-use right. In the past, the contents that teachers wrote or spoke on the blackboard in class would naturally disappear after the class ended and left no record. Electronic handouts, recorded videos, online discussion records, etc., in digital education are still saved as digital files on servers or terminal devices for a long time. Even if the teaching activity is not for profit, the digital copies of the work can still be reproduced and spread an unlimited number of times. The speed of technological development is not uniform, and therefore, the relevant legal provisions have not been updated in many areas. Therefore, it is not necessary to specify whether a digital teaching activity falls under the category of "limited purpose and limited scope" in the fair use system, and many problems have arisen in its application^[1].

1.2 The Legal Characterization Problem of Temporary Copying in the Process of Educational Digitalization

When the user is viewing the online teaching materials in the digital education area, a temporary file of the work will be automatically saved in RAM by the computer. Although this technical reproduction is necessary for viewing, its legal nature has long gone unnoticed by the system of copyright law. Different places have different views on whether temporary copying should be considered an act of reproduction under copyright law. With the development of digital education, if the temporary copying that teachers or students unintentionally carry out in the course of teaching is to be considered an act of reproduction, then most online teaching activities will fall under the scope of infringement. At the same time, if there is no legal restriction on temporary copying, the right holders will not be able to control how their works are used online.

The Interactive function of digital education is also included in this. Students are not only being given the information passively, but they are also making more lasting copies by taking notes, taking screenshots and saving them locally, etc. Functionally, the behaviour of these is the same as handwritten note-taking in traditional classrooms, but they have been realised in many technological forms, such as temporary copying and permanent saving. The original idea of "reproduction" in the fair use system came from the era of paper-based media, and the category system cannot cover all the types of reproductions created by digital technology. Due to the lack of clear regulations, educational institutions and individual users are often forced to choose between "all reproductions require authorisation" and "no authorisation is needed due to technological reasons", and thus cannot exercise their institutional function of fair use.

1.3 Disagreement over the Determination of Citation Proportion and Transformative Use in the Network Teaching Environment

With the addition of digital educational resources, teachers can now obtain all sorts of teaching materials from all over for any subject. Therefore, the number and proportion of citations are now the main indicators of whether fair use applies. In the old days of fair use, one could quote a whole short poem or a single chart. In the Information Age, works have been divided into many editable parts, and therefore the basis for calculating the citation ratio is unclear. For example, quoting a few representative frames from an audiovisual work or taking out some data entries from a database may be a very small proportion of the original work, but such use can objectively present the main expressions of that original work. Due to the conflict between proportion and significance, only a quantitative norm can be used^[2].

The application of the transformative use doctrine to digital education has aggravated the problem of determinism. Therefore, it should add something new in terms of expression, meaning or function to the original work. Teaching activities are, in their very nature, transformative, so when a work is used as an illustration, criticism or comparison, it is generally different from its original aesthetic or entertainment purpose. A teacher of digital education can directly show a whole work, such as a short film or a photograph, for the class to discuss. It has a different purpose, but the volume of use is close to that of the original. Not all the rules of procedure are in agreement that the goal of adjustment is full reproduction. Given that digital education has good scalability and repetitiveness, if the teaching materials are used every time, they may fall under the scope of the law and thus lack a stable rule of fair use.

2. Normative Causes of the Application Dilemmas in the Fair Use System

2.1 The Gap Between Closed-list Provisions and New Use Cases for Digital Education

Generally speaking, the model of the traditional legislation for the fair use system of copyright is a closed list or a semi-closed list, and only a small number of particular circumstances are permitted as exceptions. All the acts provided for in the provisions for classroom teaching, teaching demonstration and library reproduction require physical media and a physical place. New applications of digital education, such as real-time remote teaching, on-demand streaming, adaptive content delivery based on learning analytics, etc., cannot be classified according to the old list. The quantitative expressions in the above provisions, such as "limited reproduction" and "brief quotation", have lost their normative function in the digital age because there is no technical reference system. The fixed structure of closed lists cannot keep up with the changes in the use pattern of digital education, so many teaching activities that have the same non-commercial purpose are excluded from the scope of fair use.

There is a mismatch between the technical features of the use cases for digital education and the behavioural attributes in the regulations. In general, the teaching place can be referred to as a "classroom or an appropriate place", but online teaching platforms do not have physical boundaries and are often called "published works", and in digital teaching, it is often necessary to quote unpublished classroom discussion records or student assignments; although there are some conditions for "translation or adaptation" under the general provision, multimedia teaching generally requires format conversion and content organisation. It is not that the individual clauses are wrong, but rather that the whole system has changed in light of the changes in society. With the change in demands for the application of fair use in digital education recently, the institutional supply function of fair use has been reduced to some extent^[3].

2.2 Erosion of the Flexible Structure of the Right Limitation System by the Principle of Technological Neutrality

The rule of technological neutrality is that the copyright rules for works based on the technology of distribution should be the same. Based on the above reasons, it is proposed that both traditional classroom teaching and online teaching should be given the same weight in terms of fair use in digital education. The rule of technological neutrality does not take into account that media attributes also affect the weight given to use behaviour in law. As they have zero marginal costs and can be reproduced and spread instantly and infinitely, the scale of infringement risk in the digital age has been expanding. In line with the principle of technological neutrality, harmful quotes in a physical classroom will be treated the same way as similar acts that have the potential for large-scale dissemination in the network environment, and thus the contextual judgment space that the fair use system should naturally have will be reduced.

The original flexible structure of the right-limitation system was to consider all relevant factors in each case at the time of judgment, such as the purpose of use, the nature of the work, the extent of use and impact on the market. If the rule of technological neutrality is too strict, it will be difficult to derive common legal rules for similar acts in different media, and the system will not be able to keep up with changes in technology. With the development of digital education, the same teaching activity can have different social impacts based on how it is spread; for instance, local area network broadcasting and public internet live-streaming will have different results. According to the rule of technological neutrality, they should not be treated differently in the norms. If a flexible structure cannot be established, the aim of the fair-use system will not be achieved; that is to say, we will fail to curb conflicts of interest in the field of digital education.

2.3 Crowding-Out Effect of the Expansion of Licensing Mechanisms on Statutory Exceptions

With the continuous development of copyright licensing in the digital age, many more types of uses have been added to the scope of licensing. To avoid the problem of infringement, many digital education institutions have signed all-inclusive licence agreements with copyright collective management organisations or rights holders that cover all the ways the works will be used in classroom teaching. The proportion of such licenses will decrease the need to apply the fair-use rule in practice. Even if it is believed that this falls under fair use of copyright, the educational institution will still choose to acquire a licence for the sake of administrative convenience. Therefore, the statutory exceptions have been effectively bypassed by the licensing system, and it is now only a theoretical

provision that is rarely used in practice^[4].

With the development of the licence system, so too has the application of the fair-use doctrine changed. If there is already a licence channel for a particular type of use, adjudicators are more likely to believe that there is a "market substitution effect" for this use in their judgments on fair use and thus do not provide a justification for the exception. Many de minimis uses and brief quotations in digital education do not significantly affect the market for a work, but they can still be considered evidence of market harm due to the existence of licensing mechanisms and thus be charged as "license fee loss". The above logic will reduce the number of legal exceptions further. Due to the trade-off between the fair-use system and licensing arrangements, people are increasingly reluctant to use the statutory exception provisions in digital education, and as a result, the autonomy of the system has also been reduced.

3. Adjustment Paths for the Fair Use System in the Context of Digital Education

3.1 A Dynamic Balancing Test Based on the Purpose of Use and the Nature of the Work

To apply the fair use system to the area of digital education, an analytical framework that is more flexible needs to be established, and a dynamic balancing test based on the two dimensions of the purpose of use and the nature of the work should be developed. The assessment of the purpose of use should move beyond the obvious label of "non-commercial" and investigate the extent of transformation in the teaching activity; that is to say, whether the use has added new educational functions or interpretive values to the original work. Based on the type of work, there are many kinds of factual works and fictional works, published works and unpublished works, functional works and artistic works, etc. Different kinds of works should be given different extents of fair use in digital education. The two factors in dynamic balancing tests need to be in harmony; if the purpose of use is highly transformative, then the assessment of the nature of the work can be relaxed accordingly, and if the work falls under the category of factual collection or collection of public knowledge, even if the purpose of use is less transformative, the likelihood of being considered fair use is higher^[5].

A System of Typological Parameters should be established for the construction of the dynamic balancing test. The dimension of the purpose of use can be divided into subcategories, such as core teaching quotations, critical commentary and background display, and the dimension of the nature of the work can be divided into highly original expressions and low-originality factual information. All the items in the above categories have different presumed strengths for fair use. All the compound forms in digital education, such as bulk quotation, multi-work compilation and cross-media transformation, can be controlled by parameter weighting. It is not too strict or too arbitrary, and it does not fall under the category of the full-open four-factor rule. Although it will differ among different people, the rule for fair use in digital education according to the dynamic balancing test is clear.

3.2 Functional Integration of Statutory Licensing and Fair Use in Digital Teaching Scenarios

The two will be combined to achieve the aim of digital education. The former refers to the organisation and large-scale execution of works; the latter is a single case of teaching quotations. A good division of labour should be made between the two to correct the current deficiencies in digital education. For medium-sized works that are frequently used in the course of digital teaching, such as course pack materials, online test compilations and teaching case collections, fair use may not be suitable due to the large volume of use, and full application of statutory licensing will increase the licensing fees for educational institutions excessively. Therefore, we will build a two-tier system of "fair use first and statutory licensing as a supplement": First, determine whether the use act meets the dynamic balancing test; if not, then it falls under the category of statutory licensing, but the user can still be allowed to use it after paying the remuneration at the statutory rate.

The goal of the first condition is to achieve the second condition. When the scope of use exceeds what is allowed under fair use but does not involve commercial profit, a simplified statutory licence procedure should be employed, and the standard amount of statutory remuneration should be lower because it is non-commercial and for educational purposes. Technical logs and records of how often the digital education platform is used and by whom can be considered supporting evidence to determine the normative level of a use act. The dividing line for statutory licensing and fair use should not be a fixed number of uses, but rather should be flexible according to the specific conditions of the digital education environment, such as how far the audience has been reached, how long the material is used,

and whether continuous copies are made. Integration mode will not harm the interests of right holders by expanding the fair use system too much, and it will avoid the improper use of the statutory licensing system that could undermine the institutional space for fair use^[6].

3.3 Construction of Coordinated Norms between Technological Protection Measures and Fair Use Exemptions

There is an endogeneity problem in the provision of technological protection measures and the fair-use doctrine. Copyright holders have started to use encryption and other forms of access restriction to prevent unauthorised use of teaching materials online. The above measures will not be considered fair use of the teaching materials. For example, a teacher should not take a portion of an encrypted e-book for in-class demonstration, and a student must not extract and annotate a protected academic paper. It is not in an obvious form, but the technology measure does not exclude the legal exception. The Direction for the Construction of Coordinated Norms is to set up an "exception reservation" system for the protection of technological measures and fair-use exemptions, and to require that the Design and Implementation of technological measures meet the conditions of fair use.

The construction of coordinated norms can be in the form of a tiered-obligation model. For the digital distribution edition of the work in educational institutions, the rights holder should provide "teaching copies" without technological protection measures or offer access interfaces in accordance with fair use. The protective effect of the technology should be limited by the purpose of fair use; if the act prevented by the technology is legally considered fair use, then circumvention of that technology should not be considered an infringement. At the same time, the technical department of the digital education platform should also set up a channel for handling fair-use requests, have users automatically declare the purpose of use, and temporarily lift technological restrictions based on this declaration. Amendments will be made to change the favourable effect of the fair use exception into an obligatory technical norm and to promote closer cooperation between the protection of technological measures and the copyright exception system in the digital education era.

Conclusion

There is a systemic norm gap between the technical attributes of digital education and the traditional idea of the fair-use doctrine. Closed-list provisions cannot cover the new use cases of digital teaching, so they do not meet the condition of technological neutrality, the contextual flexibility provided by the system of limitations on rights has been lost, and further expansion of licensing mechanisms will reduce the scope of application for statutory exceptions. These problems do not occur in isolation but are rather many expressions of the structural tension between the logic of digital dissemination and the normative system of copyright law. Therefore, the following three modifications will be made: revision of the judgment norm, reform of the institutional path and amendment of normative construction. According to the purpose of use and the kind of work, a dynamic balance framework will be set up instead of fixed quantitative norms. Divide the problems of fair use and statutory licences into two levels and correct the norm deficiency of medium-scale use acts. An operating channel for the fair-use exception should be added to the protection of technological measures so that they do not fall under technological lock-in. More research can be carried out to expand the scope of application for the fair use system in the context of generative artificial intelligence in digital education, and the potential of blockchain technology for recording and verifying fair use can also be explored to promote the development of the copyright exception system in the information age.

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