
ORIGINAL ARTICLE

Movies as innovative tools for teaching psychiatry: a new model for cinemedicine

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ABSTRACT

BACKGROUND: The use of film as a support and integration to teaching has been the focus of studies, articles, and reviews, within the teachings of practical health care. It has now become a trend called cinemedicine. Drawing from cinemedicine, the Learning through Film (LtF) case study analyses the most significant aspects of the method and its potential use for an integrated application in universities.

METHODS: This article shows the adoption of the method (LtF) in the fifth year of the Single Cycle Degree in Medicine and Surgery at the Statale University of Milan in 2019-2020. The method consists in the analysis and presentation by students of paradigmatic films sequences and is structured for the involvement of the entire class group.

RESULTS: An analysis of the questionnaires provided to students demonstrates that the methodology improved the effectiveness of teaching by (97.87%) and enhanced students' understanding of the topics which were addressed (100%). The outcome of these first two questions marked a success for the method. Another aspect that students enjoyed was the improvement of their methods of studying and memorizing.

CONCLUSIONS: The LtF method of the Statale University of Milan appears to be useful for both students and teachers. Students found that it increased the degree of their involvement and their learning. The films helped students' understanding of clinical cases that would otherwise have been studied only theoretically. Teachers discovered that the method improved their teaching skills.

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KEY WORDS: Education, medical; Psychiatry; Education, professional; Teaching; Problem-based learning.

Introduction

Researchers with contributions that have explored unique features and limits have discussed the use of audio-visual practices in uni-

versity contexts. We shall recall here the use of cinema in teaching history,¹⁻³ sociology,^{4, 5} languages^{6, 7} and economy.⁸⁻¹³

The use of film as a support and integration to teaching has been the focus of studies, articles,

and reviews, within the teachings of practical health care. It has now become a trend called cinemedicine.

The purpose of this article was to assess and evaluate a teaching methodology that allows the audiovisual tool to become an important resource for learning. This new type of didactic improves the traditional university lectures in the medical studies. The article demonstrates how a guided use of commercial films can help learners to have a better understanding of abstract concepts and notions that are presented in class, thus enriching their training experiences, knowledge, and awareness of human-based interactions.

Movies are multimodal instruments *per se*. Indeed, they are composed of traditional lecture formats and notions, and can become praxis for students. They may improve awareness and empathic attitudes, enhancing professional values, and helping learners to develop qualities that might only have been acquired through direct experiences in daily life.

“Learning through Film” is an educational framework proposed for the “Communication” course at the University of Udine, Italy (Department of Medical Area) in the years 2018-2019 and 2019-2020. The methodology was later adapted for the Single Cycle Degree in Medicine and Surgery at the Statale University of Milan, Italy. In this article, we will describe this experience taking into account the different attitudes and outcomes of students’ performances in Milan and Udine.

This study will show how the audiovisual means and practice can be integrated as a support for teachers and students in teaching methodologies for specific medical disciplines.

Cinemedicine

When discussing the use of films in medical teaching courses, we have to deal with cinemedicine which is a term directly linked to cinemeducation. Cinemedicine indicates the integration of audiovisual tools used by teachers to enhance their lecture’s strength. Moreover, this discipline reinforces the dissemination of ethical and psychosocial values in the medical world. The use of cinemedicine in several American universities and other countries worldwide has been success-

ful because it has enhanced the broader perspectives of being a doctor, improving teaching and increasing motivation amongst students.¹⁴⁻¹⁶

Fritz and Poe propounded this particular type of application in the medical field for the first time in 1979. In particular, they involved the use of films for the training of psychiatry students.¹⁷

Due to the greater availability of digital media (DVD) and the development of digital systems and environments, since the beginning of 2000, the number of studies and methods on cinemedicine has significantly increased. In particular, this occurred within the psychiatric field,^{18, 19} the pharmacological field,²⁰ in family medicine,²¹⁻²³ in the psychosocial field¹⁴ and in nursing.²⁴

Several medical universities, in different countries worldwide, such as Spain, the USA, Brazil, South Korea, Italy, Canada, China, Israel and Germany introduced Cinemedicine into their curricular subjects, obtaining rewarding outcomes.²⁵

Below, we will focus on reports that confirm the wide use of featured films and cinematographic clips in medical teaching.²⁶⁻³³

The key objectives of Cinemedicine and more generally of Cinemeducation may be summarized as follows:

- to teach by conveying factual information;
- to facilitate the acquisition of new skills;
- to enrich learning;
- to maintain the attention and commitment of learners;
- to encourage debate and discussion;
- to motivate reflection;
- to stimulate emotions;
- to facilitate memorization processes.

Cinemeducation allows learners’ emotional sphere to emerge by helping them create a connection between issues presented in films and those that they may encounter in their future profession.^{34, 35}

Furthermore, according to Constructivist theory, discussions between students and teachers and amongst students play a fundamental role in the active learning processes. Indeed, debates stimulate students to build up their own concepts and ideas based on previous knowledge and individual experience. Moreover, cinemedicine is an effective tool in the effort of transforming medi-

cine into a more humane practice. Cinemeducation is an interesting educational instrument that may act as a catalyst for medical professionals to recover many of their missions' essential values.

We will mention here two examples that were taken as samples for experimentation of LtF at the University of Milan. The first was carried out at the Chulalongkorn Medical School between August 2006 and February 2007;³³ the second one involved medical students from Tehran University of Medical Sciences (TUMS) in 2017. The aim of both studies was to test the use of cinemedicine as a tool and technique for teaching the psychosocial aspects of medicine.¹⁴

The LtF method began as a teaching experience and experiment at the University of Udine in the years 2017-2018, when one of the authors of this article (F.F.) decided to use films during his lessons. He focused in particular on movies that presented the different topics he addressed in his courses.³⁶ The professor actively involved students by dividing them into different groups with the aim of reflecting and discussing the movies presented.

Materials and methods

The method

The method that we are presenting was adopted in the fifth year of the Single Cycle Degree in Medicine and Surgery at the Statale University of Milan in 2019-2020 and it was inspired by the LtF method used at the University of Udine. Six professional Psychiatrists from the Polyclinic of Milan (Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico) and two Professors from the University of Milan (Department of Pathophysiology and Transplantation) taught the lessons of the course.

Students were divided into groups of four during the first lesson. Each group was assigned the task of analyzing a specific film not on a voluntary choice by students but according to the inclinations of each student: two students had to prepare a presentation indicating and commenting two key sequences, that were relevant for the message conveyed, while the other two had the role of moderating, thus highlighting shortcom-

ings in their peers' presentation and identifying further key sequences, as necessary. One week later, teachers introduced the pathologies under study, during lectures.

In the workshops, students presented and discussed the "pilot" movies with particular emphasis on the pathology that they were studying at that moment.

Each group was asked to watch the assigned film at home and identify the characters that were affected by a psychiatric pathology. Finally, students tried to diagnose the disorder in the characters' behavior.

Presentation in the classroom

In the classroom, the two students that were tasked with the analysis of the film reported on the characters' diagnosis, and thus provided two or three clinically significant sequences from it.

The presentation was supported by the projection of the key sequences (clips of 3-5 minutes each) previously identified by the students.

Through direct involvement, the class was able to have a better understanding of the topics, which activated their curiosity on salient features of the story.

In addition to the presentation, the groups had to hand over a written analysis based on 1) a brief summary of the plot; 2) and the identification and the analysis of the sequences considered paradigmatic from a medical point of view. In particular: what is the content and how it is communicated; why those moments are important for the protagonist (or main character) within his/her professional area/profession and/or life path; describe, if possible, the patient's perspectives and that of the therapist in relation to the significant chosen aspect; at the end of the story, did the character (usually the protagonist) change? Why did his/her situation improve? What kind of lesson was conveyed? Beyond the conclusions it is important to highlight the reasoning that has developed and the common thread that led to this interpretation.

Thereafter, the other two students in the group started the debate by asking targeted questions and proposing other salient moments of the film where the pathology dynamics and possible treatments were made explicit. All students were

asked to contribute during the plenary discussion and to debate with their teacher on the film's salient medical aspects.

To encourage students to carry out in-depth analysis and participate in the classroom debate, scores were given according to each student's involvement (from 0 to 2). These scores contributed to the students' final evaluation.

The films presented

Eight films were presented. The movies were selected according to the specific psychiatric conditions that teachers needed to cover during their course (Table I).

Materials

At the end of the entire cycle of projections, stu-

dents were asked to anonymously answer a questionnaire that would show their opinion on the value of the audiovisual tool. The questionnaire consisted of six questions: two open ones, addressed to the entire group (47 students), which provided students the opportunity to discuss common opinions on the movies; four graded questions (scored from 1 to 10) addressed to students who were involved in the analysis of the films (32 students).

The questions presented are shown in Table II, III.

Results

The chart below (Table II) shows how the first question got an almost total percentage of yes. The justifications are listed below (Figure 1):

TABLE I.—*Films and topics.*

Film	TOPICS (Making reference to clinical case books, psychiatry manuals, and DSM-5, therapy)	Teachers
Pulp Fiction (1994)	Psychopathology	Prof. P. B.
A Beautiful Mind (2001)	Schizophrenia, delirium, other psychoses and substances of abuse	Dr. M. L.
Mr. Jones (1993)	Bipolar disorder, disruptive mood dysregulation disorder (DMDD), impulse/conduct disorder, personality disorder	Dr. A. F.
Three Colors: Blue (1993)	Depression, pseudodementia, generalized anxiety disorder (GAD) / seasonal affective disorder (SAD) / personality disorder (PD), neurocognitive disorders	Dr. V. C.
As Good As It Gets (1997)	obsessive compulsive disorder (OCD), post-traumatic stress disorder (PTSD), eating disorders, psychogeriatric	Dr. S. P.
Trainspotting (1996)	Youth psychiatry: addiction and neurodevelopment (autism, attention deficit hyperactivity disorder (ADHD), beginnings), dissociative/somatic dist.	Dr. G. P.
Peaceful Warrior (2006)	Basics of neuropsychology, cognitive enhancement	Dr. E. C.
The soul keeper (2002)	Clinical psychology: the personality and its developments. Psychodynamic aspects in the doctor-patient relationship Pathological aspects in the doctor-patient relationship The structuring of the personality: psychic growth, psychological defense mechanisms, resilience	Prof. C. B.

TABLE II.—*First questionnaire.*

Question	Tot. response	Yes	No
1 Did the use of films improve teaching?	47	46 (97.87%)	1 (2.13%)
2 Did the use of films improve your understanding of specific topics?	47	47 (100%)	0

TABLE III.—*Second questionnaire.*

Question	Tot. Resp	M Utility (0-10)	DS	Range
3 How useful was the debate with your colleagues and with the teacher in the understanding of the film and in facilitating your learning of the subject?	20/32	8.38	0.80	7-10
4 How useful were the viewing and subsequent analysis of the film carried out in the classroom?	32/32	8.02	1.10	5-10
5 How useful was presenting your analysis of the film to the other students and the teacher?	28/32	8.28	1.15	6-10

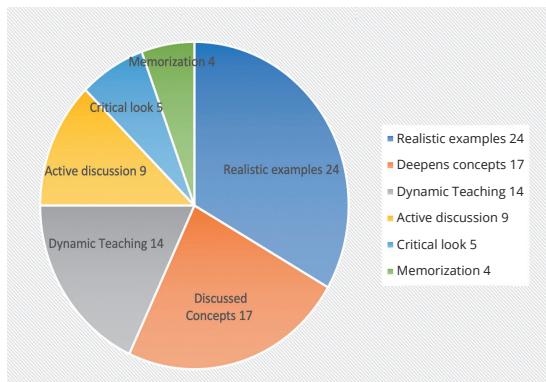


Figure 1.—Reasons reported in the first answer.

- the understanding of lessons through concrete examples (24 times);
- the acknowledgement of previously discussed concepts (17 times);
- a more dynamic and engaging teaching (14 times);
- an active debate between teacher and students (9 times);
- the development of critical awareness (5 times);
- the enhancing of useful strategies for memorization (4 times).

The result of the second question was: 47 Yes and 0 No.

The reasons given to justify these answers were many, such as the following, which were linked to a specific key theme (Figure 2):

- it gives pathologies clear and defined contours (31 times);

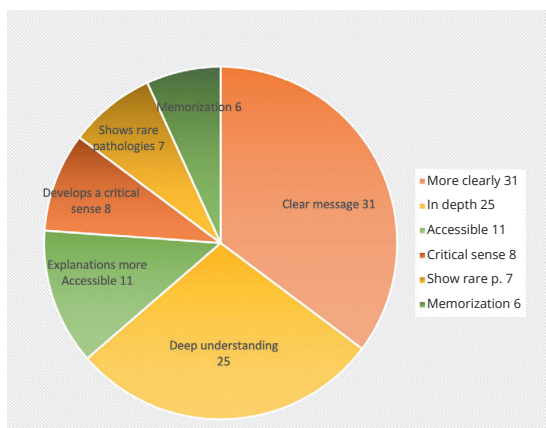


Figure 2.—Reasons reported in the second answer.

- in-depth study of topics previously discussed in the classroom (25 times);
- explanations are more accessible (11 times);
- it develops a critical sense of enquiry (8 times)
- it shows rare pathologies not found in hospital contexts (7 times);
- it enables easier memorization (6 times).

The third, fourth, and fifth questions aimed at grasping from students the degree of usefulness of using films. All three questions scored above 8 on a scale of 0 to 10.

In the last question, the score was not attributed to the practical usefulness of the method, as in the previous three questions, but rather to the range of comprehension of movie-lessons. Number 1 stood for no problems of understanding while number 10 stood for maximum problems of understanding. The average of the scores awarded was 6.16.

Finally, we compared the results of final exams that were held in the academic year 19/20 with those of the following year, in which “Learning through Film” was used. The average grade for academic year 19/20 was 27.3 with 5 honors out of 40 participants in both oral and face-to-face examinations. For the academic year 20/21, the first session counted 30 candidates in both written and online exams, with an average grade of 29.3 and 11 honors. Assuming a similar variance for scores of 19/20 academic year (assumption done due to lack of past tests scores) and performing a Student’s *t*-test for independent samples we found a statistical significant improvement in final scores ($t=7.37$, $P \text{ value} < 0.001$).

Discussion

This article dealt with the possibility of integrating the audiovisual tool as support and multisensory aid in teaching practices for professionals (psychiatrists). The case study presented (LtF) was proposed in the course of Psychiatry and Clinical Psychology in the fifth year of the Single Cycle Degree in Medicine and Surgery of the Statale University of Milan (a.a. 2019-2020).

To investigate its effectiveness, an evaluation questionnaire was given to the students. The main points that emerged in support and valida-

tion of the method and the critical issues encountered are listed below.

The type of participation

The method helped in breaking up boundaries between students and teachers, which allowed learning to be a more collaborative and proactive. During the phases of presentation and discussion, students spoke for approximately 40 minutes with the supervision of their teachers. The remaining time was dedicated to the teachers' interventions, students' questions, and conclusions. Therefore, if compared to traditional lesson where students' participation is less consistent, the LtF method allows a dialogical exchange between students and teachers, and amongst students themselves, thus stimulating reflections that can lead to higher insights.

A new method for students

An analysis of the questionnaires provided to students demonstrates that the methodology improved the effectiveness of teaching by (97.87%) and enhanced students' understanding of the topics which were addressed (100%). The outcome of these first two questions marked a success for the method. Students' appreciation was attributed to the films' intrinsic power to provide a concrete and practical perspective on theoretical issues that were presented in class, making them experience a kind of live experience. Indeed, students found that using films allowed them to visually exemplify the clinical symptoms and their evolution in patients affected by the pathologies being studied. The characters in the films showed the various stages of the disease and the actors' interpretation allowed some psychopathological manifestations to be more identifiable.

Films provide a visual sample of patients' situations and occurrences. Through their performance and the story they interpret, actors in a film can portray salient aspects of the various disorders that may otherwise remain only theoretical in the traditional training of medical students, thus showing how to act with a hypothetical patient in various contexts.

Another aspect that students enjoyed was the improvement of their methods of studying and

memorizing. The use of films made it possible to pay more attention to the pathological aspects, and to memorize them easily as "stories remain more impressed than theories." In this chapter, in quotes, students' answers on given questionnaires. At the same time, the use of films made explanations more accessible and the lectures less daunting. Indeed, from the students' point of view, "lectures are generally very specific and too long, and they do not convey the 'concrete' reality of the patient. Film on the other hand, shows "what that pathology is" and "makes the single topic less theoretical, therefore, easier to identify and understand."

The structure of this teaching method improves the understanding of specific topics, thus allowing deeper reflections from learners. "The analysis [of the films] were a verify-retrace-repeat" that made it possible for a simulated" application of the concepts presented in class to concrete situations [thus allowing] to confirm or deny the information acquired". According to the participants, "the more obviously educational films facilitated the understanding of disorders; the most difficult was to analyze perplexities that were not completely resolved," "peer-to-peer debates allowed us to clarify any doubts" and "[the use of the film] allowed us, students, to engage in a debate and to ask teachers for clarifications." The questionnaire's last question was used to highlight how difficult it was for students to analyze films. In this case, the overall average is 6.16 out of 10, making this a task that required a certain commitment and that also challenged students to use the skills they had acquired.

In conclusion, comparing the results of exams that were held in the academic year 19/20 with those of the following year, in which *Learning through Film* was used, we found a significant improvement in final scores. The differences in academic years 19/20 and 20/21 were linked to the outbreak of the SARS-CoV-2 pandemic, and these aspects should also be taken into account. In both years, the course was held in person. The exams for the 19/20 academic year were both oral and face-to-face while in the 20/21 academic year the exams were written and crosschecked on the Moodle platform.

A new method for teachers

In a discipline such as psychiatry, in which clinical aspects are compared to instrumental ones, the use of films as support and integration for lessons is significant and useful.

The actors' interpretation allows students to associate the alterations of psychic functions with verbal contents, facial expressions, and embodiments. All these aspects help students in understanding and grasping patients' experiences and facilitate the learning process of fundamental aspects of psychopathology that need to be tested in the final exam.

Conclusions

In conclusion, the LtF method of the Statale University of Milan appears to be useful for both students and teachers.

Students found that it increased the degree of their involvement and their learning. The films that were shown helped students' understanding of clinical cases that would otherwise have been studied only theoretically. Furthermore, the films' presentation, analysis and subsequent debates engaged their active participation, also allowing them to suggest a possible diagnosis for the cases showed. It is important also underline the limits of being able to use these technique only with students with high competence (fifth year of the single cycle degree).

Teachers discovered that the method improved their teaching skills. It helped them to fine-tune their lectures and improved the students' involvements in class, which produced valuable insights. Unlike the traditional formal lecture provided to a silent audience, teachers were able to prepare a more modular class. This was possible because students' presentation and analysis of films allowed teachers to have a better understanding of their knowledge and awareness of the subject. This was further explored during the open discussion where teachers answered students' questions which were numerous and very challenging.

LtF can therefore be included in cinemedicine methods because its use and effectiveness reached a high level of appreciation and can be adopted in other university teaching contexts.

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Conflicts of interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Authors' contributions

All authors have given substantial contributions to the conception of the conception and study. Paolo Brambilla and Chiara Moltrasio to acquisition of the data; Marco D'Agostini and Susanna Feruglio to data analysis and interpretation; Marco D'Agostini wrote the first draft of the manuscript. All authors read and approved the final version of the manuscript.

History

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