

TEACHING DIGITAL LITERATURE: AN APPLIANCE OF DISTANT READING & TOPIC MODELING TO THE TEACHING SCENARIO

Meisam Moghadam (Corresponding author)

Assistant Professor, Faculty of Science, Fasa University, Fasa, Iran

ORCID: <https://orcid.org/0000-0002-9123-3752>

m.moghaddam@fasau.ac.ir

Niloofar Jafarpour

MA, Technical University of Darmstadt, Germany

ORCID: <https://orcid.org/0000-0002-9554-1015>

kirstniloofar@gmail.com

Abstract

The current article tries to provide practical arguments to support the appliance of the digital methods and tools into the teaching literature curriculum in favor of distant reading of going beyond the limitations of canon and time. In this regard, a teaching literature scenario is presented to facilitate and fasten reading literature by making students familiar with the computer application in their literature studies through analyzing the resulted data from a project done by Dr. Rachel Sagner Buurma, on Victorian Literature. The chosen application is Topic Modeling, performed by the popular topic modeling tool, MALLET. The paper develops a practical three-phased scenario to be implemented in literature classroom and elaborates on the way to work with the meaning and the usages of the resulted topics and patterns. Finally, the article explores the positive and negative aspects of the presented scenario and concludes that the digital tool is not a substitute for the existing teaching material, but a supportive method to open the new perspectives in literary studies which is an adjusting method to students of the age of technology. Moreover, further research is suggested focusing on the Teaching Literature materials of curriculum targeting especially the history of literature or discovering specific new dimensions above from the accustomed theories.

Keywords: digital methods and tools, teaching literature, Topic Modeling, Distant Reading

Introduction

Teaching Digital Literature

The 21st generation of students have obviously high interest of companionship with the digital world which necessitates a reform in the conventional teaching methods and techniques. This opens up an arena for the teachers and syllabus designers to take the advantage of this opportunity to motivate the literature students to work with the literary data and being able to access, navigate, manipulate and process them. (Simanovvski, Schäfer & gendolla, 2010, p. 231). Likewise, Dene Griger (2009) states:

If indeed students spend 10 times more of their energy with fingers on a keyboard instead of a nose in a book, then it stands to reason that we should rethink our notion of literacy and advocate electronic literature as not only viable but also compelling art form for teaching. All aspects of reading, writing and communicating. (p. 233)

Therefore, with respect to the new appealing capacities of the students of the age of technology, applying the digital methods and tools into the teaching literature curriculum seems to be an obligation.

Coupled with Dene Griger's statement, Maria Goicoechea adjoins the factor of "pleasure" into another advantage of this appliance as "new reading pleasures at finding unexpected effects". (Simanovvski, Schäfer & gendolla, 2010, p. 345) This is to say, although dealing with the interest and pleasure of the students is an inevitable aspect to be taken into consideration, more promising aspects still exist.

Another argument in favor of the necessity of implementing digital tools and techniques in teaching literature can be referred to the providing competence of a better and different understanding in this interdisciplinary approach. Noah Wardrip-Fruin, UC Santa Cruz professor and Expressive Intelligence Studio co-director, puts forward the view that the appliance of Digital Literature into the academic world enables us to deal with the existing situations surrounded by technology and moreover, a better understanding of art and literate of the present-day. (Simanovvski, Schäfer & gendolla, 2010)

Furthermore, the final argument is explicitly defined in the two keywords-advantage of John Zuern statement about Teaching Digital Literature in the example of the didactic scenarios. He declares that, this new model of teaching

arouses the motivation of collecting the evidences and importantly, perusing the hints and clues by use of technology. These two important aspects make a more practical approach in the learning process and the independent learning experience. (Simanovvski, Schäfer & gendolla, 2010)

The interdisciplinary approach of teaching digital literature does not mean that the previous background literary knowledge or strategy should be abandoned, but it is supposed to make the scholars and students familiar with a new understanding on the basis of previous acknowledgment. Regarding the aim of the present article on proposing a scenario on implementing a digital literature tool in teaching literature, some rudimentary notions should be clarified and defined.

The pedagogy of digital literature can be categorized into three fields; including, the maintenance and edition of the literary texts used in the canon by the use of digital medium, the evolution of the generic characteristics of digital literature and finally the changing of teaching literature methodology by the appliance of the computer as a supportive or, sometimes, as substituted learning tools. The final aspect has attained the attention in this article. (Simanovvski, Schäfer & gendolla, 2010, p. 345) Using computer tools in teaching literature enables the students to perceive the intertextual relations of the different literary texts, which is not achievable while reading a text with an aim of enjoying or criticism.

To elaborate the main objective of the preset study, the notions of distant reading and topic modeling and their relationship and appliance into a scenario of teaching literature are elaborated. At last, an evaluation of the teaching digital literature scenario is presented by mentioning some pro and con arguments for and against it.

Distant Reading

Close reading known as the familiar type of reading, is mostly considered as what the American poet, literary theorist John Crowe Ransom in his essay "Criticism, Inc." refers as "Dense Reading" which means the detailed analysis of words, syntactic connections and semantic ambiguities sentence by sentence, paragraph by paragraph. (Lauer, 2009) By all means, the literary scholars and students are also familiar with the different types of reading skills such as skimming, scanning or study reading, but what is discussed here is the "state-of-art" method in this field.

The Stanford Professor, Franco Moretti terms the understanding of literature by aggregating and analyzing big amount of data, distant reading. (Schulz, 2011) He has pioneered this new practice in the literature studies and recommends it as a way to reach the interesting recognitions that students or literary scholars are not able to do unaided.

The challenging theory of distant reading proposes a new practice in teaching literature which involves informing the student to understand the different kinds of reading and being able to apply it to the different fields of their literary studies as Martin Müller (2015) emphasizes the importance of being trained "How to not read" as well as "How to read".

Distant reading introduces a technical way of analyzing literature by using the patterns and objective data of many works calculated by the computer tools. The computer tools are programmed to look for the patterns and measurable components of hundreds or thousands works of literature and give us the ability to compare and analyze the resulted data and above all, to uncover new aspects in the literary text. This procedure, without computer aid, is really a hard task and specifically in the limited time of academic scenarios, unpractical and impossible. In the other words, distant reading and the accompanied methods and computer tools can make the students readier to face the 21st century's huge data existence and world literature as Moretti conjectures.

Distant reading is not only considered as an alternative for depending always on small canons in teaching literature, but also, as Moretti describes, a method for reading beyond the canon. He believes that the students are too much focused on the canonical device and it is the time to discover the non-canonical universe. (Fitzpatrick, Galloway & English, 2013) In the following section, a brief overview on topic modeling as a computer tool suggested for distant reading is presented.

Topic Modeling

Topic modeling is a form of text mining. Different definitions for topic modeling suggest that topic modeling is a way of looking for patterns. These patterns are clusters of words in a corpus. (Brett, 2012). It is also necessary here, to avoid the misunderstanding about the surface meaning of the word 'Topic'. In the analyzing phase of topic modeling results, a topic should not be investigated as the direct subjects of the text, but the recurring pattern of co-occurring words. (Brett, 2012)

When topic modeling is being defined to the students, it is important to be careful as much as the definition of the phrase, data mining. The word, mining is not actually what the people in this field do. It should not be expected that the people in this field discover new factoids in their inventory databases. Otherwise, the goal of data mining is to find the trends and patterns in very large data set usually of the purpose of decision making. (Mitkov, 2004)

Elijah Meeks and Scott B. Weingart (2012) referred to topic modeling as synecdoche of digital humanities. They even believe that the two subjects of topic modeling and distant reading overlap each other from their totalized concept of looking at the text and considering the text as collections of tokens and finally producing results as topics. In this case, using the topic modeling tool help us to instantiate the topic modeling and distant reading models.

From the wide application of topic modeling in different domains, Latent Dirichlet Allocation (LDA) approach, has been the most popular approach to topic modeling in the subject of humanities and specifically literature. The underground issue behind the LDA approach, as explained by its creator, David Blei, is a field of the probabilistic modeling, and exploration of this model as a tool for finding and expressing meaning. In the other words, the comparison of occurrence of topics in a document to how a word has been assigned in other documents in order to find the best match, is the underlying mathematical model of topic modeling, latent dirichlet allocation, or LDA. (Brett, 2012)

Considering the notion of distant reading, the statistically significant distributions of words in the Topic Modeling Techniques give us the ability of distantly reading a massive body of text and greater understanding of literary texts and finally generating new questions. (London, 2016)

Relying on the last part of the definition of David Blei, applying a tool for a better or different understanding of literature and its usage, teaching literature is taken into the consideration in the proposed teaching scenario throughout the article.

The significance of the study

Literary studies and teaching literature are considered to be inevitably associated with reading; however, each subject of teaching literature requires a different way of reading. Considering both the traditional and classical types of reading, the domain of literary subjects, planned to be taught in the teaching scenarios, is determined under the limitations of time and the expected purpose of the curricula.

As an example, when the purpose of teaching a literary subject is to conclude and analyze hundreds of novels or large volumes of texts, students are not expected to stick around every word in the text. On the other hand, when the target of a teaching scenario is about all the novels published in America during the civil war during 1851 to 1875 or Victorian Literature, it is not practical nor achievable to expect the students to read them all and conclude a whole picture of all these works in the limited time of study plan. What happens in practice is the adjustment of the materials to the existing limitations. This way, the necessity of doing research on digital literature and its implementation in teaching practice seems inevitable.

It is not only an obstacle in the didactic and teaching field, but also an existing limitation on the way of literary studies in general. Nobody can explore the whole exceeding quantity of books. Literary scholars of world literature or history of literature should read millions of books to keep up with the state of research which is not an optimal solution. (Lauer, 2009) Respectively, the literary scholars and students need to get familiar with the other methods to be able to access the other aspects and natures of literature and perhaps it is no longer effective for them being asked to read and read. (Schulz, 2011) That said, even if the materials or the corpus needed to be worked on, are

not really huge data, close reading keeps the scholars and students always under the limitations and traditional analytic theories. At this point considering Franco Moretti's innovative practice seems to be a savior alternative!

The objectives of the study

Based on the above-mentioned points considering the necessity of a reformation in the viewpoint regarding the act of reading a bulk of literary text, an attempt is made in this article to suggest a teaching scenario implementing a computer tool, specifically topic modeling to boost students' capabilities to practically conduct distant reading. Secondly, the merits and demerits of the proposed scenario is evaluated critically.

The Proposed Teaching scenario

The characteristics and requirements of the teaching scenario is presented in the following table.

Table 1: Scenario characteristics and requirements

<i>Target Group</i>	Bachelor Students of English Literature Studies
<i>Subject of the Course</i>	Victorian Literature
<i>Prerequisite for participation</i>	little orientation about English Literature, general understanding of Victorian Novel characteristics offered in the previous sessions of this course
<i>Duration of the class</i>	One hour and 20 min
<i>The hour plan</i>	The launching Phase, Student Exploration, Summarization and reflection

1. The launching phase, circa 15 minutes

In the first step, the teacher starts the class by preparing the students to face most probably for the first time the interface between Literature and the digital tools and methodology. The adjustment phase, make student lose their anxiety to new methodology in literature curricula. (Simanovvski, Schäfer & gendolla, 2010, p. 349).

The teacher starts asking the following questions to give the student the idea why it is necessary to learn this new subject. These questions help the students to get ready for the specific objective that they will be expected to attain.

- What would they do, if they be interested to find out the themes of all novels published in America during the Civil war, 1851 to 1875?
- How much time probably they need?
- Can any of them guess, how much is the number of the books in the world? Do you know that the estimations support 50 to 60 million of books?
- How much reading is enough to be able to keep up with the state of research in Literature?
- What if they have been asked to analyze a text without reading it?

In the second step of the first phase, the students are being expressed, what they will be learning and why they will be learning these topics in relation to the underlying concept of Victorian Literature. At this part the essential terms which are going to be explored during the class, are addressed and written on the white board, such as Distant Reading, Topic Modeling and MALLETT.

The teacher explains the notion of distant reading. The teacher declares that the students are already familiar with Close Reading. The teacher introduces Franco Moretti's method of Distant Reading and emphasizes the aspect of going beyond the canon. The teacher presents the computer application of Text Mining and then shifts it to the subcategory of Topic Modeling. At this time, the teacher emphasizes the importance of the right understanding of the Term Topic in the analysis of Topic Modeling results. The teacher briefly introduces MALLETT and the LDA algorithm behind it.

2. Student Exploration, circa 50 minutes

In this phase, the students interact with the MALLETT. The teacher analyses the results together with the students and at the same time the students work with other students sharing and discussing the results and assisting each other. During this time, all the student work with their own computer and are able to explore the shared output files and go through the Topics.

Following the main subject of the course, Victorian Novel and its Characteristics, an example of applying a Topic Modeling Tool, MALLETT, on the works of Victorian novelist Anthony Trollope’s Barchester series, is presented. All the students are able to access the results of the project on their own computers.

An overall description of the Output files is explained to the students: After running MALLETT on the corpus including the Barchester series, they should expect two folders of outputs: get two folders (output_csv and output_html).

The output_csv folder contains the following files: DocsinTopics.csv, which provides you a list of topics and shows you which documents they’re likely to appear in, Topics_Words.csv, which offers you a numbered list of topics and TopicsinDocs.csv, which provides a list of documents, along with the topics that appear most prominently in each. The html output of the results is useful for the students to freely analyze than the csv files as the html version allows you to interactively pivot and zoom through different layers of analysis. (Handel, 2014) These information is explained by the teacher at the same time that the students explore the files on their screens.

At this time, they are ready to explore the analysis of the resulted data by going through Topic to Documents and Documents to Topics. (Wallace, 2012)

Pointing out one of the resulted topic, the topic number 38 as it is illustrated in figure 1, the students are being encountered the suggesting hints of Epistolary Novel Genre: letter, write, read, written, letters, note, wrote, writing, received, table, paper, send, answer, return, judge, handed, desk, pen, addressed.

The students have already had the subject of the Analysis of Barchester series as one of the most popular novelistic forms during the middle of the 18th century in the previous sessions. They have not encountered Epistolary Novel Genre in their discussion of Victorian Novel’s characteristics because this Genre had fallen out of favor by the century’s end. In the other words, by the mid-Victorian moment of the Barchester novels it was a distant—but, as this model helps them to see the persistent memory. The students are being told that the topic can only suggest that letter exchange and correspondence is a recurring topic or theme. (Burra, 2015)

28	1.26205	heart face hand time thought child tears stood talk comfort eyes slowly bear loved wrong sorrow kissed happy sense
29	0.74506	time carriage news brought found death hands visit returned weak return months remained tidings arrived journey immediately period message
30	0.31561	brother sister father younger danger hear blood elder returned child baby sacrifice worthy justice comfortably intentions virtue presumed cards
31	0.65514	beautiful beauty sort ladies people eyes round time twenty hair long girls good dress delighted eye large colour considered
32	0.31691	dinner wine table fellow drink glass dine dining port thing claret mutton drinking rest colonel eat bottle grave manage
33	2.70916	matter thought present mind idea hope manner wrong question anxious room fear rate matters truth means angry speaking understood
34	1.92423	room door hand back face chair looked head knew sat minutes fire eyes standing arm stood sitting entered moment
35	2.96948	words speak knew word moment mind answer leave spoken left hand thinking bring spoke feel brought told passed asked
36	0.11539	hundred income public men year petition twelve bedesmen charity music reverence press sentiment entitled twopence daily quiet tis almshouse
37	0.36204	money pay paid bills debt hands business sum property stall due interest paper payment debts pound amount lawyer affair
38	0.43938	letter write read written letters note wrote writing received table paper send answer return judge handed desk pen addressed
39	0.08324	sofa family ha stanhopes found quintain lawn drawing italian dressed carriage guests tent twas twelve lookalofts passion whispered flour
40	0.66783	ll ve didn isn won wouldn shouldn fellow haven doesn bit spruce find ain fool wasn shan wrong water
41	0.63026	wife clergyman parish duty husband lordship clergymen diocese duties circumstances vicar hands curate authority sunday clerical gig children explain
42	0.23333	uncle cousin girls daughters nephew year niece lawn years income unhappy clerk brother living croquet rent didn mere win
43	0.12569	baronet ll send son brandy child eh ha patient bed bottle friend ladyship ah drop sick eldest physician uncle
44	0.59883	world rich gentleman perfect eyes higher persons feet beauty age shoulders rank soft forty large ill absolute spirit pride
45	1.97463	subject give matter feeling things understand feelings regarded called good children settled point wished continued fact present accept wishes
46	1.5644	felt declared looked received side occasion full question usual open future position hope forward quiet intended required carried hitherto
47	0.59788	opinion action clear lawyer act attorney advice hands fit firm useless conscience agree advise means fall decision comfort public
48	0.24524	side called open men built family large wall village lived entrance front leading stone residence windows mansion broad ground

Figure 1. Topic key for 50 topics, topic 38 highlighted. (Burra, 2015)

	B	C	D	E	F	G	H	I	J	K	L	M	N				
Trollope_Framley_Parsonage_text_005.txt		38	0.14622438		33	0.08202774		34	0.0736589		35	0.07136608	17	0.07008444		8	0.06337392
Trollope_Last_Chronicle_text_036.txt		38	0.19243777		35	0.16347716		33	0.10499235		5	0.08431913	14	0.0561845		8	0.05568836
Trollope_Last_Chronicle_text_023.txt		35	0.17563435		38	0.14056555		15	0.12603901		8	0.0925366	28	0.073962		34	0.04816986
Trollope_Framley_Parsonage_text_039.txt		8	0.13541876		38	0.08128602		33	0.0778183		35	0.07620105	5	0.07246657		15	0.05901187
Trollope_Doctor_Thorne_text_043.txt		28	0.11282428		35	0.10936096		38	0.08566254		34	0.06829097	8	0.06802353		33	0.06175361
Trollope_Small_House_text_030.txt		28	0.14448069		35	0.13296756		38	0.10062693		34	0.080476	15	0.07724929		5	0.0655168
Trollope_Barchester_Towers_text_028.txt		33	0.10777581		13	0.08506376		38	0.08308894		34	0.07612388	35	0.06688049		17	0.05187641
Trollope_Last_Chronicle_text_062.txt		47	0.11588713		49	0.10145185		41	0.10032602		38	0.09169042	8	0.06422751		35	0.06018947
Trollope_Small_House_text_014.txt		8	0.10576893		35	0.08256126		2	0.06730846		38	0.06613265	34	0.0602127		14	0.05762702
Trollope_Last_Chronicle_text_059.txt		35	0.13365532		33	0.09727856		8	0.08781156		38	0.08291214	34	0.07857531		15	0.06800273
Trollope_Small_House_text_018.txt		8	0.12523476		15	0.10351823		35	0.07351983		38	0.07291997	14	0.07236859		33	0.07096204
Trollope_Doctor_Thorne_text_045.txt		14	0.17477202		33	0.08659269		34	0.06302289		8	0.05655319	38	0.05528021		35	0.05169078
Trollope_Small_House_text_027.txt		15	0.14364377		5	0.09637897		8	0.09610399		14	0.08761286	38	0.08321747		35	0.07594182
Trollope_Last_Chronicle_text_013.txt		41	0.19233767		35	0.11433929		33	0.08947757		34	0.08526808	45	0.08003398		38	0.05317091
Trollope_Barchester_Towers_text_029.txt		33	0.18377992		35	0.09143834		45	0.07854418		13	0.06968542	15	0.06506282		38	0.06149804
Trollope_Last_Chronicle_text_033.txt		21	0.1338875		35	0.10490415		8	0.0760465		41	0.07371991	14	0.07294642		38	0.07236155
Trollope_Small_House_text_010.txt		35	0.09839701		15	0.08295647		5	0.08006443		14	0.07090778	45	0.06177707		38	0.06001989
Trollope_Small_House_text_028.txt		11	0.12417109		14	0.1058981		34	0.08452346		17	0.06760107	33	0.06463756		38	0.06441601

Figure 2. Lines from topics in documents MALLET output showing chapters with relatively high percentages of topic 38. (Burra, 2015)

It is only the time when they explore “topics in documents” output, they realize that the chapters in which characters exchange letters and worry about unsent notes gesture to that earlier genre and even proffer an alternative configuration for the novel. The topics in documents output even points to one chapter in which the narrator announces that for the moment he will regress to the genre of the epistolary novel for the length of the chapter. (Burra, 2015)

The students are being told that this example was a project done by Rachel Sagner Buurma, associate professor in the Department of English Literature at Swarthmore College. They are referred directly to the article for further studies in detail.’

3. Summarization and reflection, circa 15 minutes

The teacher engages the student to summarize what they learned or discovered during their exploration in the output files. It is the time that the students express how they interpret the data. During this discussion, the students are being clarified about the notion of Topics in their literary analysis. It is actually the most important part of the designed scenario which is, to avoid misinterpretation about the topics.

Accordingly, in the final phase of the scenario, the students are being clarified that the topics, alone, are only the co-occurring of the words, which is for the computer strings of tokens, together more than it is expected and some particular documents are composed of a certain number words with comparably high probability of belonging to this topic.

Dr. Buurma (2015) suggests, the topics can connote in a simple way as author’s notes toward his novel to open us new windows to look at the novel. This author is nobody rather than the content itself. Moreover Dr. Buurma (2015) proposes to look at Topic Models of literary corpuses can be considered as hints to forms and versions which even fell out of use at the time or still underlying form of the new reformations. Topic modeling is not a mean of propelling to an objective target, but a stimulant step which is needed to be investigated and evaluated again and again.

Teaching Scenario analysis

To work with topic modeling, we require some prior conditions, which all correspond to the assumed Teaching Scenario. First of all, to have an acceptable outcome of the LDA model and to make a right decision about using the Topic Modeling Tool, we have to consider the size of the data set. In the case of small number of documents, Topic Modeling Tool is not useful and simple frequency counting Tools are suggested. This criterion applies to the notion of Distant Reading and its appliance into our experimental Teaching Scenario, we assume relatively a

big collection of literary texts. In other words, the notion of Distant Reading is not applicable to small teaching material which requires the classical Close Reading style. (Brett, 2012)

Secondly, it is advisable that the target group has already a general familiarity to the subject of the chosen corpus. It is expected that in the following teaching scenario, students of the major English Literature, have most probably this prerequisite. In this case, the subject of the course is Victorian Literature and the students have already had the lectures about the Victorian Novels and its characteristics.

Thirdly, the teachers should decide about the digital tool according to the expectations and target of the Literature course. Different tools are available in Topic Modeling. MALLET is a favorite tool being used by humanities scholars. The graphical user interface or "GUI" of MALLET, is a useful alternative to introduce MALLET to the students and to ask them to investigate the output files.

Although the chosen tool and method brings a lot of challenges with itself, it is assumed that MALLET is the most appropriate tool to be introduced for the appliance of Topic Modeling.

There are other suggesting tools and methodologies to be applied to the teaching scenarios. The visualization tools such as Voyant and word trees or word clouds can be used to investigate the patterns in words and in sentence structure in especially smaller corpus. Visualization technologies can illuminate more than patterns in sentences: they can also provoke new insights about geography in texts. Using Word cloud is absolutely easy. word clouds are visualizations of word frequency in texts, in which words are larger the more times they appear Word Trees, a more sophisticated level than a word cloud allows, so they switched to "word trees," which, as Wattenberg and Viégas (2008) have explained, are graphical versions of the traditional keyword-in-context method that enable rapid querying and exploration of bodies of text. Word trees provide a more granular display of sentence construction and patterns by showing how particular words appear in context. (Swafford, 2016)

Other Tools that which have been developed for the purpose of quantitative text analysis such as the tool AntConc from the Waseda University in Tokyo, "Voyant" from the Canadian universities of McGill and Alberta, or "CAT-MA" from the University of Hamburg have the sufficient popularity and success. (weitin, 2015)

Finally, in applying LDA in Topic Modeling, to get an optimal setting for parameters, it is suggested to run the MALLET with different parameter to observe the cohesion of the results. One of the important parameter is the number of Topics that the algorithm uses in computing the documents. The second important parameter is the iteration number, which as default, it is possible to follow the following formula:

For $T < 100$ default iterations = 200

For $T > 500$ default iterations = 1000

*Else default iterations = $2 * T$*

The suggested value for the topic proportion threshold parameter is 5% which is recommended to be increased for shorter documents. (Google Code Archive) These explanation depending on the type of is not explained in the planned design but is available and addressed to the students.

Discussion: Pros and Cons

Weighing up the Teaching Scenario, it is observable that the presented example is implicitly a good evidence for what Noah Wardrip-Fruin refers as a better understanding of art and literature as it is referred before. This practically means, it is expected that such scenarios provide the chance for the students to think above the limitations in the classic ways of looking at learning literature. (Simanovvski, Schäfer & gendolla, 2010)

Firstly, the totalization vision attained in this example implies the notion of Distant Reading of going beyond limitations and expectations. This notion is brought to existence from the investigations on the resulted data which suggest the students a different model of looking at the novel, consistent or in consistent with the theoretical ideas which already exist.

Moreover, each group of the students are able to manipulate the topics and compares it to the neighbor group, although the general setting is designed and fixed. In case of this scenario, as the numbers and adjustments are calculated before, all the groups should find similarities in the resulted topics. In the other words, this claim is put forward that Topic Modeling with MALLET and the input adjustment should be tested and performed before by the teacher or who makes the teaching plan in order to avoid to let the student face directly a variety of unrelated result and be distracted from the goal of the teaching subject. The main premise behind this scenario is that if the student run the MALLET themselves for the first time, they will not have the convincing results which motivates them to relate it to the subject of the course. Most probably, they hardly find any relations in the suggested topics and moreover, it is a time consuming process which does not fit the limited time of a subject plan.

All thing considered, it seems reasonable to assume that a fulfilled project of Topic Modeling should be introduced for the first time to the students to make them able to achieve the understanding of the advantages of the new adventure using a digital tool in their literacy curricula.

It is possible to design this scenario in another way. This is, the case that the teacher does the whole procedure of Topic Modeling with MALLET together with the students. In this case, while, there is no certain variable for the number of topics or iteration number, the “best” comes by trying altering variables and making a list of resulted data to find an acceptable variable. VERY BASIC STRATEGIES This activity is practically what Zuern considers it as a positive aspect of Digital Literature, as the students have to concentrate to gather evidences, follow up the hints, and evaluate different interpretations. (Simanovwski, Schäfer & gendolla, 2010, p. 234) However, considering the significant deviation from the target of this scenario and the barriers in the actual Teaching scenarios, as it will be mentioned in the following, the first design is preferred here.

In conclusion, both designs of scenario share three important achievements: Firstly, this structure ensures that students receive both theoretical and practical experience with each methodology and can see first-hand its strengths and weaknesses.

Secondly, the students get ready to read the computational process through an interpretive perspective. (Simanovwski, Schäfer & gendolla, 2010, 240) This ability corresponds to the educational objective of Critical Thinking in the teaching scenario. If the students are expected to think in a critical way, the teacher has to make the didactic structure in a way that it activates their mental process to consider all the details and they be able to gather the relevant information, have a careful and skeptical analysis, make judgements and think in a metacognitive way to be able to have higher order planning. (Li, 2012)

Thirdly, from a general point of view, the teacher in such scenarios turns the students’ role to researchers which are able to develop their own thoughts, views and insights about literature. (Simanovwski, Schäfer & gendolla, 2010, 282)

Despite the significant positive consequences, rebuttal aspects can be argued here. Most students find digital technology intimidating, as they are aware of the limits of their knowledge and are afraid to experiment enough to figure out how programs work. The teacher’s role to overcome these difficulties is really important. The teacher should give the students access to the detailed instructions, both written and verbal, for every lab day. (Swafford, 2016)

At this point, the teachers and the students face another challenge: The teachers are not often distinctly more informed about the digital aspect in their Teaching scenario compared to the students. It is even more likely that the students are more prepared to face the digital world, although the teacher is still supposed to be enough informed about contextualization of Digital Literature. Although the necessity to have educated teacher in this field is undeniable, still there is the probability that in this case the student encounter situations that they know more than the teacher.

Other critique refers to a more fundamental aspect of this scenario. The notion of Distant Reading has skeptical critics among the literary historian and scholars. There are still hesitations whether Moretti and other digital pioneers will be capable of demonstrating, to those who are more skeptical of the relations between materials, data, evidence, and facts that such a massive upheaval is worth the effort. (Fitzpatrick, Galloway & English, 2013)

In the light of these kinds of critiques, is it convincing to practice such new notions in the didactic realm and make the fragile generation of the students encounter it at all?

The integrative concept of “Scalable Reading” is deserved to be mentioned here as an alternative perspective to the whole scenario analysis especially considering the implicit presence of both qualitative methods of hermeneutics and quantitative methods of statistics in the presented scenario. Martin Müller proposes the notion of Scalable Reading, which indicates that Close Reading and Distant Reading mutually inform one another methodologically. This concept can be considered as a fundamental systematic advantage that make it more possible to understand the continuous existing sequence of qualitative and quantitative methods in the research projects. (weitin, 2015)

Conclusions and Implications

In the offered scenario, it is tried to support the premise that using Topic Modeling and MALLET tool follows the notion of Distant Reading in looking different at the texts of literature. Teaching Digital Literature is not an easy, completely developed field. The task of designing curricula and related canons is a new demand under developing. In this respect, new-born challenges should be expected in the related scenarios. Further research in this area may include preparing projects on the determined materials of teaching literature, using the appliance Topic Modeling, especially in the courses of the History of Literature.

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