

ADOPTION OF EXCLUSIVELY E-CONTENT IN DISTANCE HIGHER EDUCATION: THE STUDENT EXPERIENCE

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Abstract

Open and Distance Learning (ODL) has revolutionized education all over the world, creating a strong interest in investigating how to enrich distance educational processes, as well as the quality of the result. Alongside, Higher Educational Institutions (HEI), which provide distance education, bring new opportunities for innovation in education, increasing the use of the technological means. This intense use does not only aim to address the multiple challenges of the global continuous changes but to improve the quality of the programs and to shift the focus from traditional lecturing to more learner-centered approach. In this study we explore the innovation that the Hellenic Open University implemented in six new postgraduate programs, where the provided educational content was exclusively digital. The sample of this research consists of 1026 newcomer students of 88 different groups of the six new postgraduate programs, who completed the courses surveys. Following a qualitative model, the results of this study enable us to recognize the particularities and the improvements of digital material about organization and structure that should be carry out in order to meet the requirements of distance students.

Keywords: Open and distance learning, digital educational material, higher education.

1 INTRODUCTION

The Hellenic Open University (HOU), the unique Greek State University that provides distance education in both undergraduate and postgraduate level, has started to adopt a strategic framework which aims to enhance distance higher education in Greece, promoting academic innovations [1] [2]. At the first stage of this process, six new postgraduate programs commenced on the 1st October of 2016. This paper, which is a part of this ongoing research project about the improvement of distance educational process, focuses on the educational material. In this study, we explore the outcomes of the adapted innovation concerning exclusively digital educational material for six new postgraduate programs. Following a qualitative model, we tried to ensure in-depth understanding about student's engagement with exclusively digital educational content and capture their point of view about their experience. The results highlight key findings regarding the students' point of view about their interaction with exclusively digital material, describing advantages, disadvantages and their suggestions for improvement.

The rest of the paper is structured as follows; in Section 2 we discuss the concepts of open and distance learning, higher educational institutions and the value of e-content. In Section 3, we present the method used for this study, describing all the necessary steps. Section 4 illustrates the results of the study, presenting students responses. Finally, Section 5 includes the discussion and conclusion.

2 BACKGROUND

Open and distance learning (ODL) has been expanded exponentially in higher education, as it creates new learning opportunities, enabling more meaningful engagement in teaching and learning. As ODL practices combined with the latest technological means have been growing, research in the ODL field has also been evolving [3]. ODL has also significantly integrated into the higher education landscape over the last decade [4]. The number of Higher Educational Institutions (HEI) which are forging ahead to provide learning at a distance is increasingly growing, alongside with the use of new technological means [5].

There are many structural models of ODL, however, the simplest possible model envisages a straight transfer of material between institution and student, which may include feedback and interaction between student and institution [6]. Consequently, the educational content plays a key role at the distance educational process and for student's successful completion of a course. Thus, the educational content still remains one of the most important components in distance learning, as it

constitutes the main learning tool and affects greatly the quality of the educational process [7]. In this context, the focus of HEI interest turned towards to provide qualitative educational content [8],[9].

The rapid growth of the information technologies has transformed to a significant extent, resulting the evolution of the educational material into digital, which can be defined as e-content. E-content causes new forms of learning opportunities into higher education, including contemporary bibliography, variety, flexibility and low cost, faster and easily creation and renewal. Although in many HEIs, which offer distance learning, educational material still remains in the traditional printed way and there will be enormous shift to exclusively e-content in the following years. Under these circumstances, there is a need for further research about whether there are any differences between print and digital material from the student perspective and whether digital material should be organized or developed with different specifications in order to meet the needs of students. Based on this context, in this study, we try to explore the students' point of view based on their interaction with exclusively digital educational material, which was held for the first time at the HOU.

3 METHOD

This study was based on a survey given to new postgraduate students in distance higher education and their interaction with exclusively digital educational content. The e-content includes parts of text books, articles and documents that were delivered exclusively digital through the educational platform, via the eBook Reader, a reader in which students have access of their e-content, enabling them to view, print and download the content, where was allowed. In addition, part of their content was available through the digital library of HOU, which was appeared in the form of links on the platform. For each study weeks, students have to study the relevant e-content and implement the relevant educational activities. The form of each study week is constructed based on ODL characteristics [10], including students' guides, clearly defined goals, learning outcomes, key concepts, explanatory titles and subtitles, case examples, self-assessment activities and additional references for further readings.

3.1 Participants

The sample of the survey consisted of 88 group of students of the six new post graduate programs of the Hellenic Open University, that were formed in the first half of 2016-17. The six post-graduate programs belong to Social Sciences and Humanities. Of 2558 registered student in 88 groups, 1026 completed the survey, who represent the 40,11% of the students. The 22.61% of these students are from Social Sciences programs and 77,38% from Humanities. The majority of these students are women (83,04%), while the majority of them (45,13%) are between 23-29 years old.

3.2 Instrument

Using a tool of Moodle for surveys, we developed an online questionnaire as an instrument for this survey study. The questionnaire consists of 4 closed-ended questions and 12 open-ended questions where students were requested to comment in a free text on their views, concerning the questions were asked. The questionnaire consists mainly of open-ended questions, utilizing the quality model to ensure an in-depth understanding of specific situations [11]. This study focuses on the questions about the educational material of the modules, which was exclusively digital. Students were asked to identify the advantages and disadvantages of the e-content and make their suggestions for improvements.

3.3 Data Collection and Analysis

The survey took place during the first winter semester of 2016-2017. An invitation was sent by the educational platform to all of the enrolled students of the six new post-graduate programs in 88 different groups for 17 different modules. Quality research methods was used for the data analysis, using the analysis tool Nvivo (version 10) alongside with quantity research methods. Attempting to understand patterns of meaning within the set of student responses data and thereby provide cognitive access to collective significance and experience [12], thematic analysis was used, following the six phases of thematic analysis [12] which are (a) *the familiarization with data*, (b) *the generation of initial codes*, (c) *the search of themes among codes*, (d) *the reviewing of themes*, (e) *the definition and naming of themes* and (f) *the production of the final report*. During coding process, a cross check procedure was taken place, before resulting at the final form of themes' definition.

4 RESULTS

In this section, the results of the study are presented. Our study confirmed some commonly held beliefs about distance education and educational material and provided a range of new data concerning students' experience with exclusively digital educational material in higher distance education. After the coding process, students' responses were grouped into three different thematic axes which are Positive Comments, Negative Comments and Suggestions for Improvement.

4.1 Positive Comments

Three different themes were identified in the Thematic Axis of *Positive Comments*, which are *Content Structure*, *Additional audiovisual content* and *Content suitability-quality*. The majority of the comments appear in Suitability-Quality theme (77,88%), where students described e-content as *interesting, various, rich, helpful, satisfactory* and *adequate*. The 16,17% of the comments described the positive impact of the additional audiovisual content in their educational procedure, describing the e-content "*helpful, fun, interesting, enjoyable, useful*". Finally, 46 reports were encoded by students' comments (5,95%), describing their positive opinion on the e-content structure during the study weeks. Students indicate that the e-content organization had facilitated their study and how to organize it. Examples of comments state that: "*my interaction with the module content was really good, as the material was properly and sequentially structured, which made it easier to study.*", "*the organization of the material was also very good and it allowed its learning to be exploited. The division into weekly sections helped in the effective division of matter.*" Table 1 illustrates the frequencies and percentages of students for these three different themes.

Table 1. Frequencies and percentages of Positive Comments Themes

Themes of Positive comments	Number of references	Presentence
Content Structure	46	5,95%
Additional audiovisual content	125	16,17%
Suitability-Quality	602	77,88%
Sum	773	100%

The following chart (Fig.1) presents the percentage of students' responses for positive comments themes based on whether they had previous experiences in Open and Distance Learning or not. It is noticeable that in general there are no remarkable differences in students' responses. It is noteworthy, however, that a higher percentage of students' responses (17,77%) is appeared in students without prior experience in ODL, referring more positive comments about audiovisual e-content compared to students with ODL experience percentages (12,33%).

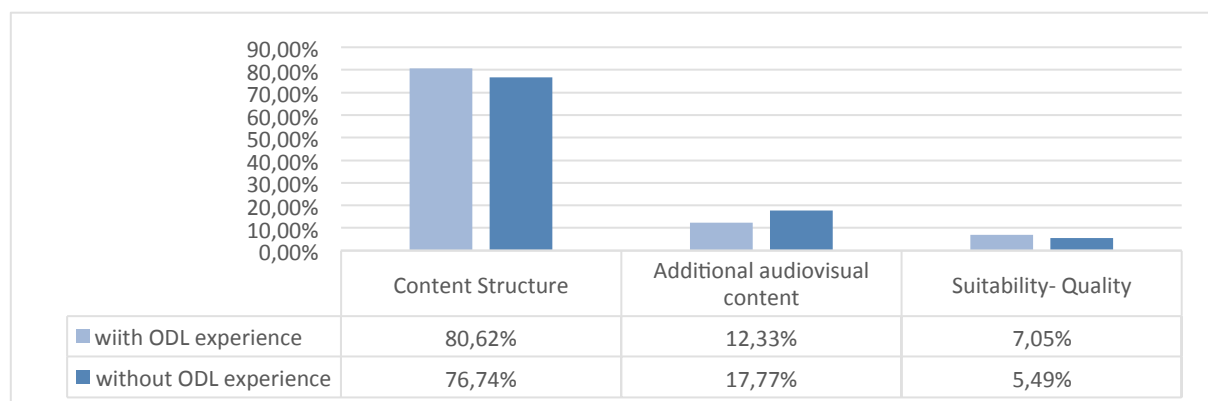


Figure 1: Chart with Positive Comments themes based on ODL experience

4.2 Negative Comments

Within this theme, students shared their negative comments about e-content of the modules. After the coding process, three different themes have been formed on the Negative Comment Thematic Axis, which include *Fragmentary*, *Suitability-Completeness* and *Content Delivery*. Most of the comments concerned the suitability and completeness of the e-content where the 70,25% of the comments described that the e-content was difficult to understand such as student's comment that "*Articles are often difficult to understand and require a lot of time to digest them*". The 24,79% of the comments described that the exclusive online form of the content which made it difficult to study. Finally, a small amount of students comments (4,96%) was related to the fragmentation of the educational material with the use of different articles or chapters as students' comment example said that "... *the fragmentary form of the content does not facilitate us to study*". Table 2 presents the frequencies and presence of the students' responses.

Table 2. Frequencies and percentages of Negative Comments Themes

Themes of Negative comments	Number of references	Presentence
Fragmentary	18	4,96%
Suitability- Completeness	255	70,25%
Content Form	90	24,79%
Sum	363	100,00%

For the negative comments axis, there are some notable differences of the students' responses with prior and without experience in ODL. As we can see from the chart below (Fig. 2), percentage responses for the fragmentary theme from students with prior experience in ODL was twice as high as the percentage responses from students without prior experience. A higher presentence from students with prior experience is also appeared in the theme Content Form (27,48%) instead of 16,67% from students without experience. Finally, more percentage of negative comments about suitability and completeness of e-content was from the students without prior experience in ODL.

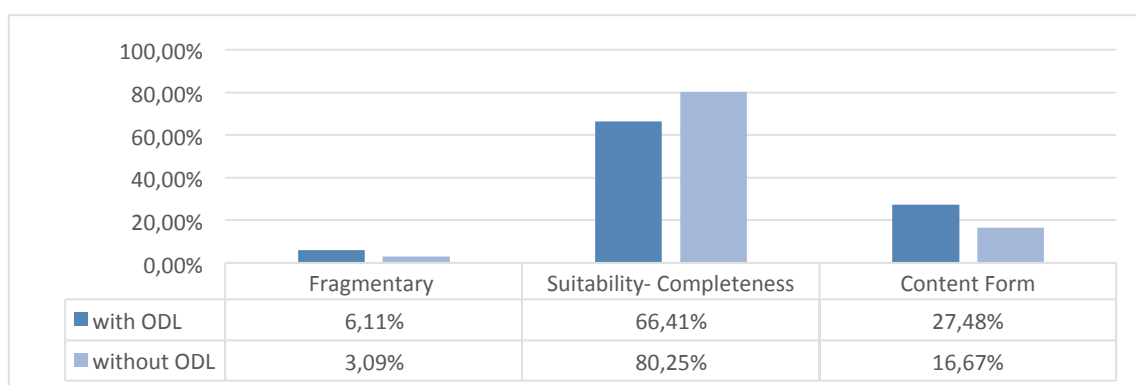


Figure 2: Chart with Negative Comments themes based on ODL experience

Focusing on the theme *Content Form*, four categories were identified, *Difficult access and search*, *Lack of printed material*, *Online form* and *Difficulties with eBook reader*. The 64,44% of the comments reported the difficulty of studying exclusively online as they had to be continuously on the screen without being able to edit or write on their own notes, as a student commented that "*This makes it difficult and tedious to study it through the computer.*" The, 11,11% of the comments mentioned problems with the search and access of the different content, which was described as inconvenient and difficult. Finally, only 7,78% of the students' comments appear that they find difficult to read the e-content through the eBook reader of the provided educational platform. Table 3 presents the frequencies and presentence of the four different categories.

Table 3. Frequencies and percentages of Content Form Categories

Content Form Categories	Number of references	Presentence
Difficult access and search	10	11,11%
Lack of printed material	15	16,66%
Online form of material	58	64,44%
Difficulties with eBook Reader	7	7,78%
Sum	90	100,00%

In the following chart (Fig. 3) the percentage responses about Content Form Categories by different age group are presented. As we can see, for the category of difficult access and search the higher percentage of the students' comments appears in the age group of 30-39 years old, while in the Lack of printed material category, the percentage of student comments from 50+ years old is higher (25%). The same appears in the Difficulties with Digital Reader with a percentage of the age group of 50+ appears higher at 12,5%.

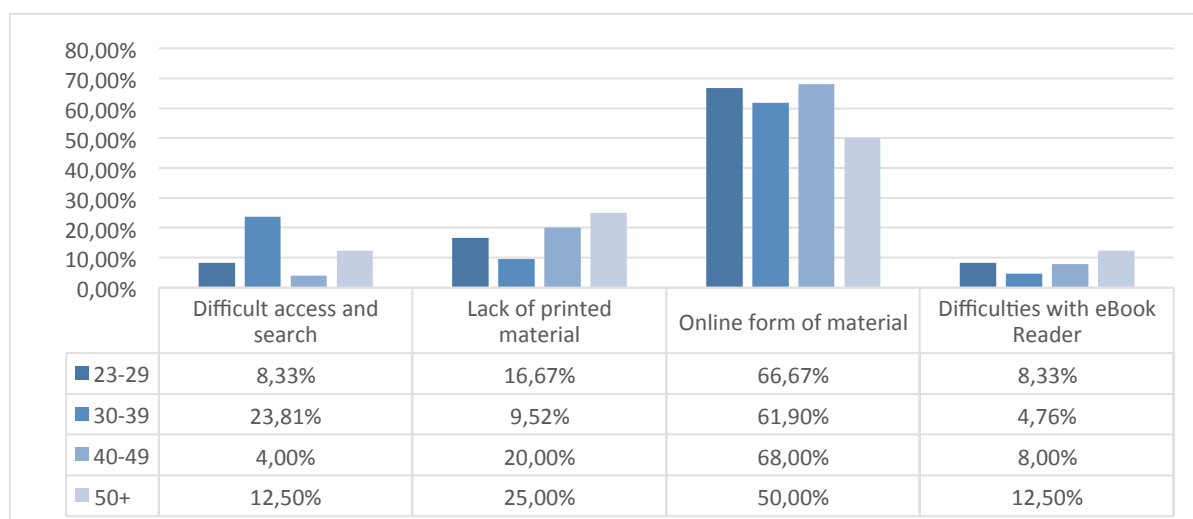


Figure 3: Chart with Content Form Categories based on students' age groups

4.3 Suggestions or improvement

The *Suggestions for Improvement* axis concerns suggestions which were made by students aiming at the e-content improvement, which were divided into five themes, *Changes in the existing material*, *Improvement of services*, *Improvement of organization*, *More additional material* and *Different ways of material delivery*. The 42,31% of the students' comments concerned about changes in the e-content which include updating existing educational material or access to more complementary bibliography as a students said "I would like to have access to other writings that would be ancillary to understanding the basic educational material" and "Provide additional literature/articles depending on the subject and the requirements of weekly activities". In addition, some students proposed that every module should have its own integrated material and some students proposed that educational material should be more relevant to Greek reality. Moreover, more examples, tables and diagrams are requested in order to better understand the content. The 24,31% of the comments proposed changes on the material delivery ways and enable the print or edit ability, while 19,83% of the students ask for more additional audiovisual material, as it helps them to better understand the educational material. The 8,76% of the comments propose a better destitution of material in study weeks and 4,96% of the comments propose an improvement of the provided services such as an improvement of the digital library services and eBook reader services.

Table 4. Frequencies and percentages of Suggestions of improvements Themes

Suggestions of improvements Themes	Number of references	Presentence
Changes in the existing material	256	42,31%
Improvement of services	30	4,96%
Improvement of organization	53	8,76%
More audiovisual material	120	19,83%
Different ways of material delivery	146	24,13%
Sum	605	100,00%

The following chart (Fig.4) presents the percentages of students' responses for suggestions for improvements theme based on whether they had previous experiences in ODL or not. In the category Changes in the existing material, the higher percentage of the students' comments appears in the percentage of students without ODL experience, while in the Improvement of organization category, the percentage of students' comments with ODL experience is higher. The same appears in the Different ways of material delivery with a percentage of students with ODL experience appears higher at 29,71%.

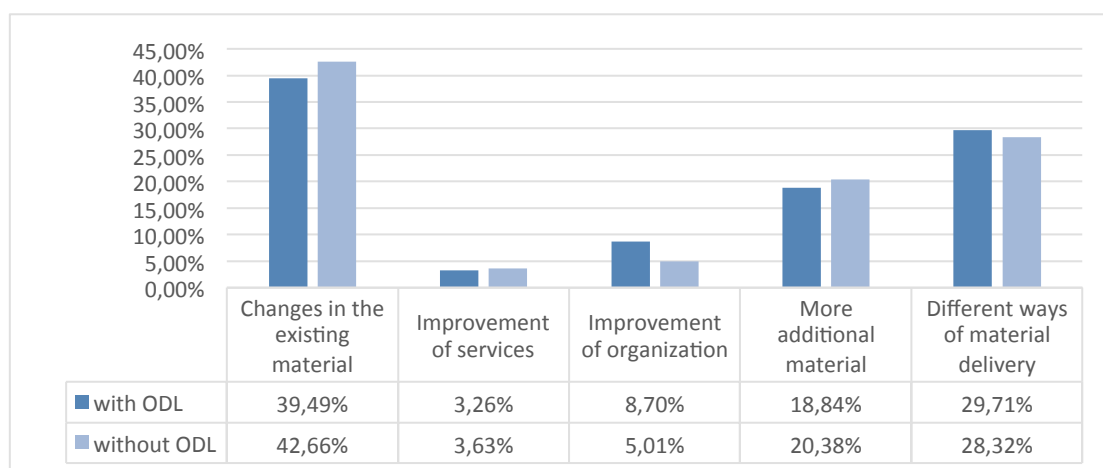


Figure 4: Chart with Suggestions for improvement themes based on ODL experience

Focusing on the theme *Different ways of material delivery*, three categories were identified, *Print capability*, *Editable files for notes* and *Provision of printed material*. The 76,71% of the comments were about the provision of the material, where printed material for the entire content of the module is proposed. The 17,12% of the students' comments were about the capability of printing for all the provided e-content and 6,16% of the comments students propose e-content in editable files in order mark them with notes. Table 5 illustrates the frequencies and the percentage of the responses.

Table 5. Frequencies and percentages of Content Delivery Categories

Categories of Content Delivery	Number of references	Presentence
Print capability	25	17,12%
Editable files for notes	9	6,16%
Provision of printed material	112	76,71%
Sum	146	100,00%

In the following chart (Fig. 5) the percentage responses about the different ways of providing material by different age group are presented. Based on the responses, the percentage of print capability

category appears higher for the age groups 40-49 and 50+, while in the Editable files for notes category the percentage of student comments in 50+ age group is higher (20,83%). A difference result appears in the Provision of material delivery category, where smaller ages show higher rates (82,61% and 86,36%).

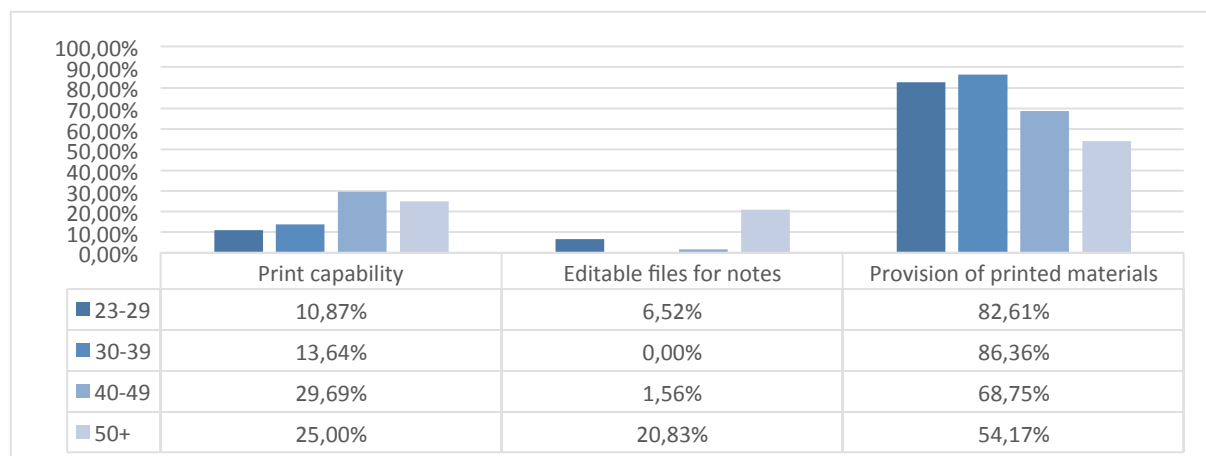


Figure 5: Chart with Content Delivery Categories based on students' age groups

5 DISCUSSION AND CONCLUSION

In this paper, the survey results of the students' point of view about their interaction with exclusively digital material, describing advantages, disadvantages and their suggestions for improvement are presented. In general, most of the students shared their positive experiences with the e-content during the first semester of their studies, as the number of positive comments was higher than the negative comments.

Regarding the positive comments, most of the comments were related to Suitability-Quality of the e-content, where most students featured it as *interesting, varied, rich, helpful, satisfactory and adequate*. A large percentage of comments in positive comments theme was about the structure and the organization of the material, where students described their positive opinion for the study weeks-based organization. In addition, several positive comments were made about the audiovisual material that was used and/or developed, which was featured as *helpful, entertaining, useful and enjoyable*. Positive comments were also received for the additional notes-presentations, where they existed, which were commented as highly perceived and helpful in understanding the module's subject matter. It is noticeable that, in general, there are not remarkable differences in students' responses based on their experience in ODL. However, it appears that students without prior experience in ODL feature additional the audiovisual material particularly helpful instead of students with prior experience.

Regarding the negative comments about e-content, the highest percentage refers to the category Suitability-Completeness where the educational material was characterized as incomprehensible. In addition, several comments reported the form of the material, characterizing the online form quite inconvenient during reading. Based on the results, we recognize that there is a need to improve the digital applications in order to offer more suitable services for online reading. For example, the eBook reader needs to be improved in order to enable search, edit and notes. In particular, it seemed a difficulty for older people to use digital applications, as they need a better guidance.

Although the educational material is accompanied by a package of ODL characteristics, including learning activities, which they were extensively helpful for understanding the module subject matter [13], students who have no previous experience in ODL felt they needed more guidelines. A package of pre-modules which aim to prepare students and help them to become more familiar with the digital content and the technological means could be a solution. Remarkably, the most of the negative comments about the different form of the material were from students with previous ODL experience, which may mean that they were already used to a previous model, so the new form of e-content seemed foreign to them. As we would expect, older students ask for printed material. The online form of the content does not seem to have played an important role at the older group ages in the results, however, it is possible that they printed all the material on their own. Based on the suggestions that students proposed, it seems that students have much more expectations about the offered variety and

they ask for even more content in different formats, especially audio and video formats. The use of international bibliography has been positive, although students need content which is more relevant based on the country reality. In addition, as it is known in distance education, students proposed that the content should include more examples, case studies, guides etc.. Finally, we indicate that different group of ages did not make a remarkable differences in students' responses, however older groups of ages wanted the ability to mark the content with notes.

This research contributes to increase our understanding of the advantages and disadvantages on the new form of content as exclusively e-content from students' perspective. Improvement suggestions for academic and administrative support, as well the structure of e-content are also discussed by this study.

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