

# Primary School Pre-Service Teachers' Perceptions of CourseLab 2.4 and Its Attributes as a Free E-Learning Content Creation Software

Theresia Yunia Setyawan  
Primary School Teacher Education  
FKIP, Universitas Sanata Dharma  
Depok, Sleman, Yogyakarta, Indonesia  
theresiayunia@usd.ac.id

**Abstract**— This research was qualitative survey research aiming at elaborating the primary school pre-service teachers' perceptions of CourseLab 2.4 and its attributes a free e-learning content creation software. During the research, a questionnaire sheet containing five questions related to CourseLab 2.4 was distributed to 47 sophomore students of Primary School Teacher Education Program of Sanata Dharma University taking MPB ICT (Media Pembelajaran Berbasis ICT) as one of their compulsory subjects. The analysis of the data gathered from the questionnaire responses showed that the primary school pre-service teachers of Sanata Dharma University had positive perceptions of CourseLab 2.4. These positive perceptions were attributed to the advantageous features of the free authoring software, such as the similarity of its user interface to Microsoft PowerPoint and its ability to facilitate the pre-service teachers to create interactive quizzes. The positive perceptions of the primary school pre-service teachers also led to their positive attitudes towards the software as shown by their confidence in planning to continue using it in their professional life later.

**Keywords:** *component, ICT, CourseLab 2.4, e-learning content creation software*

## I. INTRODUCTION

As widely acknowledged, technology integration has become a necessity in 21st-century teaching and learning processes. This kind of process has transformed the classroom into a cybernetics space where there are no physical or time constraints [1]. Consequently, teachers need to accept the fact that students need not physically meet them to get knowledge and information. Students can learn and search for whatever information they need to develop their knowledge and skills. However, as proposed by Priyatma [2], teachers can switch their role as a mediator between knowledge or information and their students to become a mentor who facilitates their students with appropriate learning opportunities for the sake of the students' development of knowledge and skills.

Primary school pre-service teachers as someone who will be the future mentor of 21st-century learning, need to equip themselves with the ability not only to integrate technology in teaching and learning. Primary school pre-service teachers also to create opportunities for their future students to develop the knowledge and skills needed to become lifelong learners in an increasingly digital and global world [3-4]. They are expected

to have proficiency in designing a learning environment that will assist their students in keeping their tracks and so as not to get 'lost' and survive in the enormous cybernetics space. They are required to have the ability to design materials suitable to the need and characteristics of 21st-century students and, hence, support these students' existence in the boundless cybernetics space. These learning materials, known as e-learning content, will assist the students in becoming self-sufficient in finding and establishing their roles as 21st-century learners and in developing their knowledge and skills autonomously. Besides, these pre-service teachers should also have an awareness that e-learning content can improve the quality of students' learning by actively engaging them to seek and access the information they need as well as by determining their direction and pace of education.

One of the programs used in designing and creating e-learning content is CourseLab 2.4. This free authoring software is relatively easy to use because it doesn't require any programming skills. It has a WYSIWYG (what you see is what you get) characteristic that makes it easier to preview the result of the created content. Also, e-learning content created using CourseLab 2.4 can be published on the web, Learning Management System (LMS), CD-ROM, and other devices.

Despite all its advantages, however, CourseLab 2.4 was an authoring program new to the primary school pre-service teachers of Sanata Dharma University. They had not had any opportunities to learn to use the program until recently. Due to that reason, there had not been any data about how it was used as well as about the student teachers' perceptions of the authoring program and its features which could be used as a basis in implementing the program intensively and thoroughly. In a more practical way, the data relating to the student teachers' perceptions of CourseLab 2.4 would aid the concerned teachers in making decisions concerning the degree to which they could teach the student teachers to use CourseLab 2.4 as well as to what degree this authoring program could benefit the pre-service teachers in supporting their role as a teacher later in their professional life.

### A. Perceptions

Generally speaking, perception is the understanding or awareness that one gains through the use of one's senses. It is a mental impression resulting from the process of dwelling on,

knowledge, or interpreting something. In learning, perception may be viewed as the way teachers or students perceive the learning experiences in hand. It is the process by which teachers, as well as students, organize their senses to produce a meaningful experience of what they do in the class [5].

Alongside attitudes, Marzano [6] labeled perceptions as one of the five critical aspects essential to successful learning. Together with the four other elements (i.e., acquiring and integrating knowledge, extending and refining experience, using knowledge meaningfully, and habits of mind), they form dimensions of learning useful to study as well as to maintain a focus on the learning process itself. These so-called dimensions of learning will be helpful in planning curriculum, instruction, and assessment that take into account those five critical aspects of learning.

Perceptions, as Marzano further suggested, have a significant role in learning because they can motivate students to learn adeptly. Student perceptions of the learning climate as well as about the classroom tasks, will affect their knowledge. In line with the idea, learning will likely take place more successfully when students feel accepted by their teachers and feel comfortable in a class that provides safety and good organization. Also, students will also be likely to learn better when they believe that the tasks they do have value, that they understand what the tasks require them to do, and that they have the resources necessary to complete the tasks [7].

Following Marzano [6, 7], Pickens [5] also argued that perception is closely related to attitudes. For that reason, promoting students' positive perceptions of learning experiences is considered to be necessary to foster the students' positive attitudes towards the learning itself. Teachers, as also noted by Aghamolae and Fazel [8], can then help to promote students' positive perceptions of learning and, hence, fostering their positive attitudes towards its processes by providing a supportive learning climate as well as meaningful classroom tasks to the students.

In this digital era, teachers are loaded with more responsibilities. They are urged to facilitate and assist their students whenever any new tool or technology is involved as comfort with the device or technology can affect the students' perceptions of the learning as well [9]. They are required to assist their students in using a new device or technology, for it is how the students can use and implement the tool and technology, not the attributes inherent to the tool or technology itself, that affect the students' perceptions of learning [10].

### *B. CourseLab 2.4*

CourseLab is one of the authoring software developed by WebSoft, a leading independent software vendor in Russia. This authoring software is available in two versions, i.e. the commercial version 2.7 and its free version 2.4. Apart from the difference in versions, both CourseLab 2.7 and CourseLab 2.4 have almost the same characteristics. CourseLab 2.7, however, has more complete features, templates, and interactive objects than its 2.4 version. There are notwithstanding some key features of CourseLab version 2.4 that also serve as its plus points. One of them is its WYSIWYG (what you see is what you get) characteristic, which is very handy in designing and

managing high-quality e-learning content. Another advantage of CourseLab 2.4 is that it does not require any special knowledge of HTML (HyperText Markup Language) or other programming skills. It allows users to program different types of interactions based on the users' intention through just three stages of Events, Actions, and Objects [11].

CourseLab 2.4 also has the available user-friendly environment for designing e-learning courses. It supports different file formats of texts, images, and videos. Further, it also offers rich and intuitive templates for an interactive test or exercise development [12].

This program also supports Unicode that enables the use of fonts and characters supported by the Windows® operating system, including the use of double-byte characters such as Chinese or Japanese. Further, objects used in CourseLab 2.4 are highly customizable. As a result, the construction of the object-oriented model in designing e-learning content can be done just as easy as putting together building blocks. Concerning its output, this authoring program is known to have been able to generate a dynamic HTML-based output and, in this way, can be played in a web browser without Java® or any other special player software.

Just like creating e-learning content with authoring programs such as Articulate Studio or Adobe Captivate, creating e-learning with CourseLab 2.4 also benefits learning in some ways. Besides being paperless, e-learning content can be accessed anytime and almost anywhere by students so long as they are connected to the system or web page where the content is embedded. E-materials created by authoring programs like CourseLab 2.4 are very advantageous in improving the quality of learning [13, 14] because they can retain students' engagement and memory through their interactivity. Also, e-materials are considered suitable to the characteristics of the digital generation who are accustomed to processing information quickly, who prefer visuals rather than texts, who tend to choose gamification for more serious tasks, and who are always eager to be connected to each other [15].

Apart from its advantages, however, Dağ, Durdu, and Gerdan [16] noted that CourseLab 2.4 might have few drawbacks. In their study, Dağ, Durdu, and Gerdan found out that non-English speaker students' perceptions of the software were affected by the fact that the program only used English for its interface, menus, and help files. As these students might not be quite proficient in the language, they had difficulties in dealing with the commands and prompted in the software. Dağ, Durdu, and Gerdan further concluded that, although CourseLab 2.4 was considered a comprehensive educational authoring software because of its abilities in supporting multimedia animations, it still required its users to attend some training sessions or seminars in order to be able to use the software effectively.

## II. METHODOLOGY

This study was a one-shot pre-structured qualitative survey aiming at identifying the perceptions towards CourseLab 2.4 and its attributes as a free e-learning content creation software among pre-service teachers of the Primary Teacher Training Program of Sanata Dharma University. Unlike statistical

surveys, this qualitative survey merely aimed to determine the variation of the primary pre-service teachers' perceptions of the topic in question and does not mean to establish frequencies, means, or other statistical parameters [17]. This study was categorized as a pre-structured qualitative survey because, along with what Jansen put further, the categories of questions were defined beforehand, and the identification of the answers to the questions was completed through a structured questioning protocol using a questionnaire. Further, it was claimed to be a one-shot survey, for it only involved one empirical cycle of generating research questions, data collection process, data analysis, and report writing.

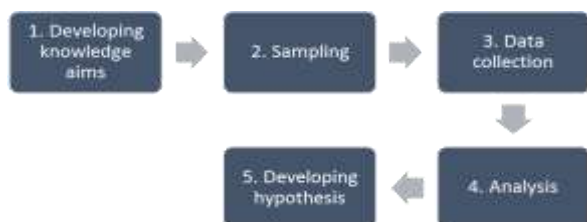


Fig. 1. The Steps of Qualitative Survey [17]

As shown in Figure 1, there were five main steps to which the study was conducted. The first step of developing knowledge aims covered things such as determining the topic (i.e., CourseLab 2.4 and its attributes as a free e-learning content creation software) as well as its aspects (i.e., primary school pre-service teachers' perceptions) under study. The sampling step encompassed the method of sample selection, as well as the criterion size of the population. This study was supposed to take 52 sophomore students as its survey respondents. These students belonged to two classes among the ten classes of students taking MPB ICT (Media Pembelajaran Berbasis ICT) as one of their compulsory subjects. Further, for practicality, the classes to which the student respondents belong were selected based on the availability of the researcher's schedule and were, therefore, non-randomly chosen among all the ten classes taking the same course.

The third step of this qualitative survey procedure was the data gathering step, initiated with the construction of a questionnaire as the major instrument of the research. The questionnaire in question included both closed and open questions aiming at elaborating the perceptions of the research respondents on the topic being investigated. Further, in the attempt to obtain valid research data as well as to avoid misunderstanding about the instruction and the interpretation of the questions, the questionnaire was constructed in the student respondents' native language [18]. Also, for the sake of ensuring its response rate, the questionnaire was distributed as one of their compulsory assignments during the course.

After the questionnaire construction was done, the next step was to carry out a pre-test or a pilot test. This pre-test was necessary to verify that the questionnaire was well-understood and did not yield obvious bias effects [19]. One of the most commonly used methods in pre-testing questionnaire items is by asking the advice of a panel of experts. As Holyk [20] suggested, expert panels had substantive and methodological expertise to give feedback on constructed questionnaires. They were supposed to have "seen it all" over their years of

experience and could be accounted for, pointing out troublesome aspects of the questionnaire. Based on what Trobia and Holyk proposed, then, two experts having the background of informatics and learning technology were asked to review and give feedback on the questionnaire constructed for this study. The result of this review and feedback was later used to refine the questionnaire before it was distributed to the student respondents.

The data gathering process started when the revised questionnaire was distributed to the students in the first and second week of May 2017 as one of their assignments of the MPB ICT (Media Pembelajaran Berbasis ICT) course they were taking during the semester. From a total of 52 students qualified as the respondents of the research, 47 students had succeeded in completing the questionnaire and submit it to the researcher on time. It meant that five students failed to comply with the questionnaire because they dropped the course before the questionnaire was distributed.

Following the data, the collection phase was the phase when the researcher analyzed the data gathered through the questionnaire. This phase included coding the data and classifying them into categories such as the attitudes of the respondents towards CourseLab 2.4 as well as the benefits and constraints of CourseLab 2.4. The result of the coding and categorization of data was then described and synthesized to form patterns and concepts related to perceptions. It was also the phase where the relationships between the concepts and patterns were explained thoroughly based on kinds of literature and practices. Once the explanation was complete, a hypothesis that was based on the data analysis was formed as the last step of the research. The hypothesis then served as the conclusion of the research as well.

### III. RESULTS AND DISCUSSION

The data gathered from the respondents showed that 66% of the respondents considered CourseLab 2.4 user-friendly and that 87.23% of them ensured that they would use the software to assist them with their tasks in their later professional life as teachers. The gathered data inferred that the majority of the student respondents had positive perceptions of CourseLab 2.4 and, accordingly, showed positive attitudes towards using the software [5]. They analyzed responses indicated that the student respondents were at ease when operating CourseLab 2.4 because it shared many similarities to the presentation software they were accustomed to (i.e., Microsoft PowerPoint). The student respondents further specified that the user-friendliness of CourseLab 2.4 was also due to the availability of the Help menu in almost every object that they could consult whenever they had difficulties in using certain objects. Presumably, the software was considered user-friendly because it did not require them to have any programming knowledge to use it [11].

As the further analysis of the gathered responses suggested, the student respondents had positive responses of CourseLab 2.4 because the tasks they were required to do with the software had values for them as primary school pre-service teachers. They knew what they had to do to complete the task as well as how the software could assist them with the task [7,

8]. It was worth noting that, in the course of this study, the students were asked to create e-learning material using CourseLab 2.4 during their two-week training sessions. The material assigned was supposed to cover any particular standard competencies from any of the five main subjects taught in primary schools (i.e., language, math, science, social studies, and civic education). The students were also required to create a quiz at the end of the material they created that functioned as learning feedback for their intended users or, in this case, primary school students. Still in line with what this idea, this assignment was very likely to promote the students' positive perceptions of CourseLab 2.4 as the authoring software also provided them with similar, and hence, familiar environment as they would have when using Microsoft PowerPoint [12].

The responses gathered from the student respondents' also revealed that their positive perceptions of CourseLab 2.4 were associated with the advantageous features of the software. The coding process of the responses discovered that the student respondents valued CourseLab 2.4 because it enabled them to create interactive quizzes and cram all the questions in just one slide or page [12]. What was more appealing to the students was the availability of 'an agent' that allowed them to give amusing feedback for every type of the quiz questions they already made using the software. This agent could be set to show certain facial expressions as well as perform physical movements using certain codes via the 'action' menu. This kind of feedback, as the students suggested, was not only enjoyable for them to make but, hopefully, also motivating as well as entertaining for their intended users (i.e., primary school students) doing the quizzes [15].

As mentioned earlier in this section, 66% of the respondents considered CourseLab 2.4 user-friendly, and 87.23% of them confirmed that they would continue using it later when they were teachers. Based on this data, it was safe to assume that 34% of the respondents viewed the authoring software as unhandy. In contrast, 12.77% of them stated that the possibility of their continuing using the software was still questionable. This 'negative' perceptions of CourseLab 2.4 might accumulate from several aspects elaborated below.

To begin with, the 'negative' perceptions might due to the students' limited experience in coding [16]. Though CourseLab 2.4 does not entail any programming knowledge, its users are still required to choose a specific command from the available list of commands to be able to animate certain objects. Users still need to specify which commands and their usage order to animate any specified objects, to animate an agent, for example, there were some commands that the students needed to choose by clicking before the agent could really perform what it was intended to.

Another feature of CourseLab 2.4 that might evoke the students' negative perceptions was the use of English as its user interface (UI) language. While the commercial version of the authoring software (i.e., CourseLab 2.7) comes with several alternative languages other than English, the free version supports only English. Though the language should not have been a problem when they were already familiar with Microsoft PowerPoint, the student respondents testified that

they still got difficulties when dealing with the English language interface of CourseLab 2.4. To some extent, this made it harder for the students to understand what certain commands meant or what they should do when a dialog box appeared on their screen. This might be due to the fact that the software was still relatively new to them and that they only had limited time to get familiar with and use it [16].

Further analysis of the gathered responses also revealed that, in part, the categorization of slides under the labels of title, master, and normal might also be one of the reasons why few student respondents had negative perceptions of CourseLab 2.4. The students were presumably not familiar with this kind of grouping even though Microsoft PowerPoint had a similar feature labeled as Slide Master located in the Master Views group on the View tab. It was very likely that they were used to create a presentation or material right along on the normal view of the software. Hence, having to use the three kinds of slides in CourseLab 2.4 (i.e., title, master, and normal slides) would seem troublesome for them until they became more familiar and at ease with them.

Other limitations of CourseLab 2.4 that the student respondents reported were limited Module Templates group (e.g., themes, backgrounds, transitions, etc.) as well as limited animated objects (e.g., agents, balloons, etc.). These limitations, however, might due to its being a free authoring software for WebSoft, as its developer had detailed that those limitations were intentionally created to differentiate CourseLab 2.4 from its commercial 2.7 version. Accordingly, there was nothing technical could be done about these limitations, except for making good use of the available features of CourseLab 2.4 for, as proposed by Rossing, Miller, Cecil, and Stamper [9] and Armstrong [10], it was how the software was used and employed and not the attributes inherent to the software itself, that would affect the students' perceptions of learning.

#### IV. CONCLUSIONS

The primary school pre-service teachers of Sanata Dharma University had positive perceptions of as well as positive attitudes towards CourseLab 2.4 and its attributes as a free e-learning content creation software. The positive opinions could be attributed to several advantageous features of the software itself. The student-teachers credited that the user interface (UI) CourseLab 2.4 was similar to Microsoft PowerPoint, so it was relatively easy for them to work with and move around the software. They also valued it because it facilitated them to easily create interactive quizzes with entertaining feedback using the agent feature.

The pre-service teachers also noted a few limitations concerning CourseLab 2.4. The limitations they posed were mainly due to the attribute of the software as free authoring software. They cited that it had limited templates and animated character objects as well as limited alternative interface languages. Their limited experience in coding might also interfere with the difficulty they reported when they had to code objects in the software.

Apart from the limitations, however, the pre-service teachers had positive attitudes towards CourseLab 2.4. They

assured that they would continue using the software in their professional life as teachers later. They considered it a very helpful software in creating interactive as well as interesting tests and quizzes for their future students. They believed that making materials and tests or quizzes this way would suit the characteristics of their future alpha generation students.

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