Impact of ICT-assisted thesis writing on Student researchers' psychological empowerment: Indonesian case

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Abstract. Internet of Things (IoT) in the 4.0 industrial revolution is crucial for higher education. This mode is often assisted by the use of Information and Communication Technology (ICT), e.g. in the context of thesis writing. The ICT-assisted thesis writing is now a demand to empower student researchers. Thus, this paper attempts to evaluate the impact of the multimode thesis writing on the student psychological empowerment. Employing a case study, sixteen student-researchers from a private English college participated in this study. All participants had involved in multimode ICT-assisted thesis writing. Supervisor' website, youtube, edmodo, and whatsApp were used to facilitate student researchers distance supervision. The data were gathered through questionnaires and a focused-group interview. The results revealed that the student researcher became voiced and more autonomous. They also felt more motivated for the thesis completion. Instead of having individual work, the student researchers engaged in a direct collaborative works. Thus, ICT-assisted thesis writing was empowering both for the supervisor and the student researchers. In addition, emerging issues and pedagogical implication were also discussed.

1.   Introduction

In spite of a number of studies, a number of scholarly works about the academic writing in relating to the ICT based instruction have been already presented, e.g. Czech. According to the Klimova, ICT is useful for providing students chance for getting collaborative works (1). Through teaching by media, students are motivated and have positive responses that, at the end, they can improve their writing skills. Students become familiar with the expression alive from the internet. As the results, they are getting more interested to write as they find it interesting listening, reading and writing at the final stage (2).

On the other hand, what student writes is what he is-a reputation of being high literacy (3). Improving students' writing skill is one of the professionalism of the lecturers as the members of the faculty (4). This is to imply students' writing skill is affected by a number of factors, e.g. supervisors, supervision, environment, media.

Having sense of ownership is affected by some situation, e.g. having choices during the writing. In this case, multimedia, both online and off-line media are reported important e.g. online media such as edmodo, website, youtube, etc. Online discussion demonstrates how it is effective to improve student's writing skills through its online forum of discussion. The interesting here is the staff members provided different instructional approach, e.g. online discussion forum, project and classroom

interaction (4). Thus, the paper attempts to describe how the ICT-assisted thesis writing was able to facilitate student-researchers to be empowered during their thesis completion.

2.   Methods

This research used qualitative case study research. Case study method enables a researcher to closely examine the data within a specific context. Case study is "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (5)"

This study focused on the detail information about how the implementation of ICT-assisted thesis writing activities and their benefit for the student-researcher for their thesis completion. The participants of this research were fourteen third graders of English Educational Department who were involved in the ICT-assisted thesis writing projects through website, Edmodo, youtube, and whatsapp. All data were collected through questionnaire, interview, and reflective journals.

3.   Results

The student-researchers' perception towards the use of the ICT-assisted thesis writing is presented in the following table 1. The findings suggest that the student-researchers felt more autonomous. They also revealed they had more options and preferences on the submission and writing manners. Feedback and comments were perceived easier.

Tabel 1. Student-researchers' perception towards the use of the ICT in thesis writing

No.	Statement	%
1	Having ability to change supervisor's decision due consultation slots	50,00
2	I usually ask for my friends to have discussion	71,43
3	Blended supervision makes me impatient to have a supervision	85,71
4	Having ability to deal due to alloted times	85,71
5	Online supervision awareness	92,86
6	Positive impacts	92,86
7	Awareness of blended supervision	92,86
8	Blended motivates for thesis completion	92,86
9	Having ability to help the other	92,86
10	I am the information sources in the group discussion	92,86
11	Blended supervision builds autonomy	100,00
12	Blended supervision offers supervision modes of choices	100,00
13	Having ability to make comments or question on commented section	100,00
14	It is easy to make discussion to the supervisor	100,00

The figure 1 provides the demographic views of the participants' engagement on the ICT-assisted thesis writing. The findings show that only sometimes did the student-researchers participate in the alive online tutorials. In this case, it seems that videos are perceived providing better understanding and promote learning engagement (6). Thus, web 2.0 serves better learning quality in terms of autonomous, collaborative, and active learning (7). It proves that having mobile-internet devices serve the undergraduate students to have a self-efficacy (8).
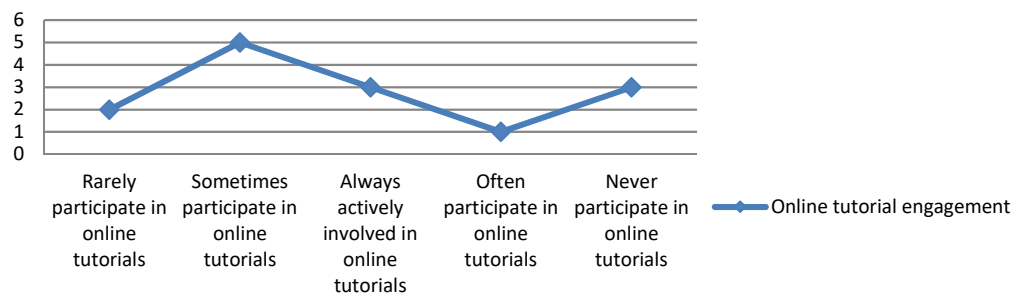
Figure 1. Supervisees' engagement in online tutorials

The student empowerment, e.g. having freedom and choices for their draft submission and revision are also reflected in their reflective journals.

Draft bimbingan bisa di kirim ke rumah sehingga kita bisa menyerahkan hasil revisi kapan saja . Pada saat bimbingan dijelaskan secara detail secara langsung.Bisa sharing dengan teman-teman satu bimbingan lain sehingga jika ada yang belum dimengerti bisa bertanya ke teman lainnya. Tidak mempersulit mahasiswa (Lussy).

The files are safely sent to the supervisor [**mobile-assisted services**]. It forces us to schedule to send the draft right away based on student's convenience [**choices**]. We can discuss the feedback together [**collaborative**]. Thus, we can share and exchange ideas [**autonomous**] (Lussy)

As the students' writing drafts are easy sent and returned by the support of the mobile-assisted services or through the online services, students perceived it as convenient ways for the having supervision (distant conference to their supervisors). The students were also forced to work collaboratively as the feedback was given. Each can share and exchange ideas. Autonomous learning occurs in this stages (7)

.. Saat bimbingan pun kita sebagai mahasiswa selalu diajarkan untuk saling membantu satu sama lain [**collaborative**] dan memecahkan masalah bersama-sama [**empowering**] (Gita)

The student-researchers used to work together [collaborative] and to solve the arising problems altogether [**empowering**] (Gita)

As the results of the collaborative working, the student-researchers are empowered. They know what they have and how to solve the difficulties arose during the feedback given by their supervisors in forms of electronic feedbacks (8). Edmodo, for an example, was powerful for having online and off-line supervision. This make the consultation easier and tend to be empowering. The student-researchers found it empowering as they felt of freedom.

Bimbingan cukup dimudahkan dengan penggunaan aplikasi ruang edmodo (Devy)
The supervision is getting easier [**empowered**] as the online edmodo platform was utilized [**ICT-assisted supervision**]

Bimbingan melalui edmodo sehingga lebih mudah dan fleksibel [**empowered**]" (Diny).
Edmodo-assisted supervision make us easier [empowered] and be flexible [freedom] (Diny)

As the male supervisor tends to be more active in using ICT-based interaction than the female supervisors (9), the findings indicate that the female student-researchers dominant in the discussion. It also seems that the female student-researcher more powerful than the male student-researcher in terms of the feedback discussion.

4. Conclusion

It concludes online thesis writing and supervision are beneficial for both developing students' sense of empowerment. The student-researchers become more autonomous, voiced and good time-managed.

Instead of the unrevealed evidences of being more powerful than the male student-researchers, the female student-researchers successfully portrait the success of the ICT-assisted thesis writing.

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