Explanations in Teaching Conceptions among Students Teachers in Malaysia and Indonesia

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Abstract
The art of explaining is generically present whether it is done purposely, clearly and with impact or otherwise. Educationally, being able to explain is pertinent even though explanations in teaching are not particularly visible in literature, either theoretically or empirically. This has sparked the current empirical study on the conceptions of explanations in teaching among Universiti Teknologi MARA Malaysia and Universitas Negeri Yogyakarta students teachers. The objective of the study is to investigate the conceptions of explanation in teaching among Malaysian and Indonesian student teachers. A quantitative research design via a survey method was employed. The purposive sampling participants are required to fill in an eight section questionnaire which is distributed via Google Form. The descriptive statistics analysis shows that, in summary, the participants of both universities strongly agree to the conception that explanation is critically important in teaching and being able to explain well is a sign of good teaching. The recommendation is to carry out empirical research into the implementation of explanation in teaching, not just among student teachers but among public and private schools in-service teachers, locally and internationally.
Keywords: Explanations in Teaching Conceptions, Students, Teachers, Malaysia, Indonesia

Introduction
What comes to our mind when we think of teaching? A diversity of related activities is likely to appear. Rajagopal (2019, p. 7) asserts that "normally, teaching acts fall within a range of activities that covers explaining, describing, demonstration, exemplifying, guiding, etc." Each of these activities carry with them different definitions and interpretations at the philosophical, theoretical and implementation level which could further be influenced by culture. Nonetheless, there is bound to be some generic information that could be shared by all. The first word, explaining, from the quotation is of particular interest in this paper. This is for pertinent reasons. There has been rather scarce coverage and literature of the word "explain" in the teaching sphere. This is rather surprising for explaining is the embodiment of teaching as expressed by Christodoulou (2014): "Explanation is a fundamental element in

education and the process of learning or acquiring something new." Explanation skills among teachers are important, for teachers who could explain well are likely to assist students' comprehension of a subject matter. Albert Einstein once said: "If you can't explain it simply, you don't understand it well enough" which does not only state the importance of explaining but also the manner of explaining. Teachers, student teachers as well as other education stakeholders need to understand the concept of explanation in teaching clearly if they are to give a more effective assistance to learners in the learning process. As of the present time, there are relatively very few empirical studies.

Literature

In teaching, explanations are thought of as an intentional attempt to make comprehension possible (Gwyneth 2007; Brown and Atkins 1986). There needs to be the phenomenon, the explainer and explanations in teaching to take place (Fairhurst, 1981). It is a tool to develop logical thinking and judgement making, and more importantly this is done in a mutual way between the teachers and the students (Skalkova, 1999; Mares & Krivohlavy, 1995). There are elements that should be considered when explaining. Good explanations in teaching encompass showing differences of the outcome, making the explanations relevant, believable, structured as well as clear. It is also thought that explanation could be incomplete for a specific reason (Spreeuwenberg, 2019). There could be many aims including explanations in teaching. Such aims could relate to time, quality, opportunities of gaining information of understanding and facilitating comprehension of subject matter. Various methods of explaining are available for the teachers to adopt and adapt. Among those cited in this study are as follows: connecting abstract ideas to everyday life, using models, pictures and analogies as well as gauging (Sherrington, 2019). For all the benefits of explanations in teachings, there are the pitfalls. These pitfalls could be related to time, improvisation and individual mistakes by the students to be addressed. In addition to that, Sanchez & Garcia-Rodicio (2013) states that ineffective explanation could be due to the clarity while Roelle et al (2015) adds that ineffective explanation could also due to non-integration of the explanation to everyday life. In her article on what makes a good instructional explanation, Malamed (n.d.) put forward pertinent ideas that explanations are to be adaptive, there should be deliberation of mistakes in understanding before explaining, more learners' active participation and the use of self-explanatory.

Based on the importance of explanations in teaching and the scarcity of coverage and empirical studies on explanations in teaching, the objective of this paper is thus to examine Malaysian and Indonesian student teachers' conception of explanations in teaching.

Method

The participants of this study are student teachers from two universities. The first is the Faculty of Education, Universiti Teknologi MARA (ED UiTM) and the second is the students teachers from the Faculty of Arts and Language, Yogyakarta State University (FAL UNY). A purposeful sampling method that works by distinguishing and choosing people or groups of people that are particularly educated about or experienced with a phenomenon of interest (Cresswell and Clark, 2011) is the best possible method of sampling for this research. The sample size requirements adhered to the formula as shared by Krejcie & Morgan's (1970) table was adhered to.

A quantitative research design via a survey method was employed for this empirical study. The student teachers of the two universities are required to fill in a questionnaire which are distributed via Google Forms. The student teachers from ED UiTM were given the link to the questionnaire on 17 August 2021 while they were undergoing a pre-practicum session. The link was shared via the pre-practicum Whatsapp group. Meanwhile the FAL UNY group, the distribution of the questionnaire was via one of the members of this research group. The questionnaire consists of eight sections namely demographic, definitions, good explanations, aims, methods, pitfalls, better explanations and overall perception of explanations in teaching. The analysis of data is via descriptive statistics - frequencies, measures of central tendency, and measures of variability.

Results and Discussion

This section presents the findings from the analysis of data. The presentation of findings is to follow the sections in the questionnaire. to the first section is the demographic of the participants which are summarised as follows. The participants consisted of more females (81.3%) and less of male (18.7%). Responses were received from Semester 3, 5, 6, 7 and 8 with the highest percentage of response from Semester 7 (39.3%, n = 59) while the lowest was from Semester 6 (4.7%, n = 7). This is shown in Figure 1.
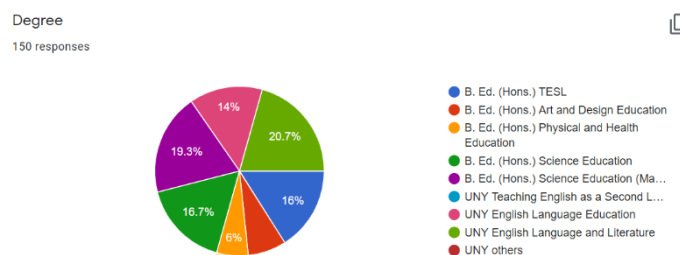

Figure 1: Participants' programme in both universities.

The next seven sub-sections are to present the findings as in the questionnaire on the examination of Malaysian and Indonesian student teachers' conception of explanations in teaching.

Explanations in Teachings

In teaching, explanations are thought as an intentional attempt to make comprehension possible (Gwyneth, 2007; Brown and Atkins, 1986). There needs to be the phenomenon, the explainer and explainee for explanations in teaching to take place (Fairhurst, 1981). It is a tool to develop logical thinking and judgement making, and more importantly this is done in a mutual way between the teachers and the students (Skalkova, 1999; Mares & Krivohlavy, 1995). Table 3.1 shows the findings for "What are explanations in teachings?" in relation to the gender of the participants.

Table 1
Participants based on gender and universities

			N	Mean	Std. Deviation				N	Mean	Std. Deviation
UiTM	Male	A1	16	4.38	.619	UNY	Male	A1	12	4.33	.492
		A2	16	4.25	.577			A2	12	4.08	1.084
		A3	16	4.44	.629			A3	12	4.00	1.128
		A4	16	4.38	.619			A4	12	4.33	.492
		A5	16	4.38	.619			A5	12	4.00	1.044
		Valid N (listwise)	16					Valid N (listwise)	12		
	Female	A1	82	4.60	.493		Female	A1	40	4.27	.452
		A2	82	4.41	.647			A2	40	3.98	.660
		A3	82	4.62	.488			A3	40	4.15	.921
		A4	82	4.54	.549			A4	40	4.10	.900
		A5	82	4.56	.499			A5	40	4.18	.931
		Valid N (listwise)	82					Valid N (listwise)	40		

According to Table 1, 16 male students from UiTM selected that "Good explanations must be relevant." with (M=4.44, SD= 0.629). Compared to the male students in UNY, where two items with the same equal mean are "Good explanations must show the difference between outcomes." and item "Good explanations must be believable" with the mean of 4.33 and SD= 0.492. On the other hand, the female students from UiTM agree that "Good explanations must be relevant." It has the highest mean in this category with (M= 4.62, SD= 0.488). The item that closely follows is "Good explanations must show the difference between outcomes" with (M=4.60, SD=0.493), which is the same item with the highest mean amongst female students in UNY. To sum it up, explanations in teachings for both gender and universities are rather similar.

Good Explanations in Teaching
There are elements that should be considered when explaining. Good explanation in teaching encompasses showing differences of the outcome, making the explanations

relevant, believable, structured as well as clear. It is also thought that explanation could be incomplete for a specific reason (Spreeuwenberg, 2019). Table 3.2 showcases the findings of elements in good explanations in teaching.

Table 2
Elements of good explanations in teachings

		N	Mean	Std. Deviation			N	Mean	Std. Deviation
UiTM	Good explanations must show the difference between outcomes.	98	4.48	.596	UNY	Good explanations must show the difference between outcomes.	52	3.54	1.019
	Good explanations do not necessarily be complete.	98	3.14	1.084		Good explanations do not necessarily be complete.	52	2.69	1.076
	Good explanations must be relevant.	98	4.59	.534		Good explanations must be relevant.	52	4.31	.897
	Good explanations must be believable.	98	4.37	.709		Good explanations must be believable.	52	3.85	1.073
	Good explanations must be structured and clearly presented.	98	4.78	.419		Good explanations must be structured and clearly presented.	52	4.17	1.004
	Valid N (listwise)	98				Valid N (listwise)	52		

Based on the average mean from the data obtained, students from UiTM agree strongly with the item "Good explanations must be structured and clearly presented" (M=4.78, SD= 0.419) while students from UNY reasonably agrees with the same statements (M=4.17, SD= 1.004). The highest item amongst UNY students is "Good explanations must be relevant" (M=4.31, SD=0.897) compared to UiTM where the item stated has the third highest mean of 4.59 SD= 0.534. Besides that, there is a low mean of item "Good explanations do not necessarily be complete with (M=2.69, SD=1.076) and (M=3.14, SD=1.084) that were selected by UNY and UiTM students, respectively. This can be concluded that they believe that explanation in teachings needs to be complete for it to be considered in a good explanation category.

Aims of Explanations in Teaching

There could be many aims in including explanations in teaching. Such aims could relate to time, quality, opportunities of gaining information of understanding and facilitating comprehension of subject matter.

Table 3
Aims of Explanation in Teaching

	N	Mean	Std. Deviation			N	Mean	Std. Deviation
Explanations aim at introducing students to a subject matter in a faster manner.	98	4.00	.885	UNY	Explanations aim at introducing students to a subject matter in a faster manner.	52	3.35	.926
Explanations aim at introducing students to a subject manner in a more effective way.	98	4.52	.560		Explanations aim at introducing students to a subject manner in a more effective way.	52	4.02	.804
Explanations aim at providing a higher number of	98	4.30	.646		Explanations aim at providing a higher number of	52	3.69	.940

possibilities to address students with different levels of abilities.				possibilities to address students with different levels of abilities.			
Explanations aim at providing a higher number opportunities to obtain information about students' understanding of a subject matter.	98	4.40	.622	Explanations aim at providing a higher number opportunities to obtain information about students' understanding of a subject matter.	52	3.87	.929
Explanations aim to facilitate students' comprehension of subject matter.	98	4.51	.561	Explanations aim to facilitate students' comprehension of subject matter.	52	4.06	.916
Valid N (listwise)	98			Valid N (listwise)	52		

Based on the data obtained on Aims of Explanations in Teaching (Table 3), a high mean of 4.52, SD= 0.560 of the item "Explanations aim at introducing students to a subject manner in a more effective way" were chosen by UiTM students while the item that closely follows is "Explanations aim to facilitate students' comprehension of subject matter" with (M=4.51, SD=0.561) which is also the same item with the highest mean amongst UNY students. The item with the lowest mean from both UiTM and UNY respectively is "Explanations aim at introducing students to a subject matter in a faster manner" with (M= 4.00, SD= 0.885) from UiTM and (M=3.35, SD= 0.926) from UNY. This can indicate that this item of UiTM and UNY students' understanding of the aim of explanations in teaching was chosen with a conception of neither agree nor disagree in mind.

Methods of Explanations in Teaching
Various methods of explaining is available for the teachers to adopt and adapt. Among those cited in this study are as follows: connecting abstracts ideas to everyday life, using models, pictures, and analogies as well as gauging (Sherrington, 2019)

Table 4
Methods of explanations in teaching

			N	Mean	Std. Deviation				N	Mean	Std. Deviation
UiTM	6	D1	7	3.43	.976	UNY	3	D1	15	3.87	1.356
		D2	7	3.43	.976			D2	15	3.80	1.265
		D3	7	3.14	1.069			D3	15	3.60	1.183
		D4	7	3.14	1.069			D4	15	3.60	1.183
		D5	7	3.43	.976			D5	15	3.13	.834
		Valid N (listwise)	7					Valid N (listwise)	15		
	7	D1	55	3.33	.982		5	D1	19	4.11	.994
		D2	55	3.25	.966			D2	19	3.95	.911
		D3	55	3.11	1.012			D3	19	3.89	.994
		D4	55	3.29	.956			D4	19	4.00	.943
		D5	55	3.33	.904			D5	19	3.74	.872
		Valid N (listwise)	55					Valid N (listwise)	19		
	8	D1	36	3.31	1.091		7	D1	4	4.25	.500
		D2	36	3.47	1.000			D2	4	4.25	.957
		D3	36	3.44	1.027			D3	4	4.00	1.155
		D4	36	3.47	.941			D4	4	4.25	.957
		D5	36	3.22	1.098			D5	4	3.50	1.291
		Valid N (listwise)	36					Valid N (listwise)	4		
							8	D1	14	3.93	.616
								D2	14	3.79	.802
								D3	14	3.71	.914
								D4	14	4.00	.679
								D5	14	3.79	.699
								Valid N (listwise)	14		

A comparison between students in respective semesters in UiTM and UNY were investigated to obtain data for students' understanding of Methods of Explanations in teaching (Table 4). This is because most of the students ranging from semester six until 8 are the students who are preparing and those who has already undergone their practicum session. Therefore, this will help to get a better insight into the issues.

An average total means of 3.38 were obtained for students in UiTM which indicates the students neither agree nor disagree with the items of their understanding of methods in explanations. The item that received the highest of the said average mean is "Using models is one of the best methods to explain.". Compared to UNY, an average total means of 3.85 were obtained, and the highest individual average mean of item 4.04 is the item "Making connections from abstract ideas to everyday life is one of the best methods to explain." The inference made from this finding is that the participants have a rather weak understanding to the methods of explanations in teaching.

Pitfalls of Explanations in Teaching

For all the benefits of explanations in teachings, there are the pitfalls. These pitfalls could be related to time, improvisation, and individual mistakes by the students to be addressed. In addition to that, Sanchez & Garcia-Rodicio (2013) states that ineffective explanation could be due to the clarity while Roelle et al (2015) adds that ineffective explanation could also due to non-integration of the explanation to everyday life.

Table 5
Pitfalls of explanation in teaching

			N	Mean	Std. Deviation				N	Mean	Std. Deviation
UiTM	6	AA1	7	3.14	1.464	UNY	3	AA1	15	3.33	1.234
		AB2	7	3.43	1.272			AB2	15	3.27	1.223
		AC3	7	3.57	1.397			AC3	15	3.47	1.060
		AD4	7	3.71	1.496			AD4	15	3.73	1.223
		AE5	7	3.29	1.254			AE5	15	3.80	1.265
		Valid N (listwise)	7					Valid N (listwise)	15		
	7	AA1	55	3.38	1.472		5	AA1	19	3.53	1.020
		AB2	55	3.62	1.367			AB2	19	3.63	1.012
		AC3	55	3.47	1.331			AC3	19	3.47	1.020
		AD4	55	3.71	1.370			AD4	19	3.95	1.026
		AE5	55	3.64	1.406			AE5	19	3.42	.961
		Valid N (listwise)	55					Valid N (listwise)	19		
	8	AA1	36	3.58	1.204		7	AA1	4	3.75	1.893
		AB2	36	3.75	1.204			AB2	4	3.00	1.633
		AC3	36	3.58	1.251			AC3	4	3.25	1.708
		AD4	36	3.69	1.348			AD4	4	3.75	1.893

	AE5	36	3.64	1.291		AE5	4	3.00	1.414
	Valid N (listwise)	36				Valid N (listwise)	4		
					8	AA1	14	3.21	1.369
						AB2	14	3.14	1.027
						AC3	14	3.21	.975
						AD4	14	3.43	1.399
						AE5	14	3.50	1.225
						Valid N (listwise)	14		

An analysis based on the semesters between the two universities was carried out to get an insight into which type of method can also contribute to their understanding of the pitfalls of explanations in teaching (Table 5). An average total means of 3.55 was obtained from UiTM students, indicating that they have selected neither agree nor disagree with the questions items of their understanding of the pitfall of explanation in teaching. To compare, UNY students also obtained an average total mean of 3.4 out of all items, indicating that they neither agree nor disagree with the items. The highest average mean of 3.7 obtained from UiTM students is from item "Explanations can be ineffective when the explanations are not presented in a way that clarifies specific misunderstandings" and this item is also the same item selected from UNY students with an average mean of 3.72. The findings indicate that the participants' opinions on the pitfalls of explanation in teaching is rather inconclusive.

Generating Better Explanations in Teaching

In her article on what makes a good instructional explanation, Malamed (n.d.) put forward pertinent ideas that explanations are to be adaptive, there should be deliberation of mistakes in understanding before explaining, more learners' active participations and the use of self-explanatory.

Table 6
Generating better explanations in teaching

		N	Mean	Std. Deviation				N	Mean	Std. Deviation
UITM	Make explanations adaptive to the context.	98	3.72	1.383		UNY	Make explanations adaptive to the context.	52	3.81	1.205
	Point out the flaws in understanding before explaining.	98	3.60	1.241			Point out the flaws in understanding before explaining.	52	3.63	1.085
	Enable active processing for the learners to be more active they processes an explanation.	98	3.72	1.314			Enable active processing for the learners to be more active they processes an explanation.	52	3.62	1.069
	Promote a self-explanation strategy where learners explain new concepts to themselves.	98	3.74	1.295			Promote a self-explanation strategy where learners explain new concepts to themselves.	52	3.48	1.019
	Valid N (listwise)	98					Valid N (listwise)	52		

Table 6 shows the item with the highest mean chosen by UiTM students is "Promote a self-explanation strategy where learners explain new concepts to themselves." (M=3.74, SD=1.295). In contrast, this item is one of the lowest means chosen by UNY students (3.48, SD= 1.069). The two items that follow closely chosen by UiTM students with the same mean of 3.72 are "Enable active processing for the learners to be more active when they process an explanation." and "Make explanations adaptive to the context." However, to compare, item "Enable active processing for the learners to be more active they process an explanation." With (M=3.81, SD=1.205) is the item with the highest mean chosen by UNY students amongst other items. The findings indicate that participants from the two universities have similar opinions to the ideas of generating better explanations in teaching.

Explanations in teaching summary
Table 7
Explanations in teaching summary based on gender in UiTM and UNY

	Gender		N	Mean	Std. Deviation		Gender		N	Mean	Std. Deviation
UiTM	Male	Explanation that is good is a sign of good teaching.	16	4.50	.516	UNY	Male	Explanation that is good is a sign of good teaching.	12	3.50	1.567
		The capacity to explain is critically important in teaching	16	4.75	.447			The capacity to explain is critically important in teaching	12	3.67	1.670
		Valid N (listwise)	16					Valid N (listwise)	12		
	Female	Explanation that is good is a sign of good teaching.	82	4.59	.719		Female	Explanation that is good is a sign of good teaching.	40	3.95	1.108
		The capacity to explain is critically important in teaching	82	4.54	.740			The capacity to explain is critically important in teaching	40	4.10	1.128
		Valid N (listwise)	82					Valid N (listwise)	40		

Based on table 3.7, the average score of the item in the last section of the questionnaire from male and female students in UiTM is 4.6 and 4.5, respectively, which indicate that they agree with both statements "Explanation that is good is a sign of good teaching." and "The capacity to explain is critically important in teaching." To compare, the male students from UNY have a neutral view of the items with an average mean of 3.5, while on the other hand, the female students agree with both items with an average mean of 4.0. To recapitulate, both

female students of UiTM and UNY and male students of UiTM share the same view, while only male students from UNY share a neutral view of the items.

Conclusions

The aim of this paper is to examine Malaysian and Indonesian student teachers' conception of explanations in teaching. The findings show that participants' conceptions of the different elements pertaining to explanations in teaching are varied. To the question of what explanations in teaching is, the participants concede a high agreement on what explanations are. Explanations are tools for intentional activities to provide understanding to the learners. This has to be done in a mutual manner between the teacher and the learner so explanations could assist comprehension greatly (Gwyneth 2007; Brown and Atkins 1986; Fairhurst, 1981; Skalkova, 1999; Mares & Krivohlavy, 1995). The findings from the section on good explanation in teaching shows that the participants are in congruent to the idea that good explanation should be simple, clear and relatable to the content subject (Spreeuwenberg, 2019).

When the participants were asked about the aims of explanations in teaching, the participants stated that the aims are to help understanding subject matter faster and more effectively. This is shown in the high mean and standard deviation of the findings. The next issue is related to methods of explanations in teachings. Models, pictures, analogies, making connections from abstract to everyday life as well as gauging are just some of the methods that could be used (Sherrington, 2019). The findings are stronger among the UNY students as compared to their UiTM counterpart (Table 3.4). This is rather interesting for some of the participants who have yet to experience continuous explanations in teaching for they have yet to go for their teaching practicum.

In lieu of the pitfalls of explanations in teaching, the participants are in agreement that explanations require time, improvement activities and integrations of learning activities (Sanchez & Garcia-Rodicio, 2013; Roelle et al., 2015). The mean achieved by both groups are within the same range as shown in Table 3.5. Making explanations adaptive, active which could lead to promote self-explanation are important in making explanations more beneficial to the learners (Malamed, n.d.). The participants are not exactly convinced on this because their agreement is at the mean range of 3 (Table 3.6) which could mean that they need to experience more explaining activities to really grasp the ways to improve explanations.

To UiTM participants, their agreement is strong to the notion that the capacity to explain and that explanation is a sign of good teaching in comparison to their UNY counterpart. This could be interpreted that the experience as learners and the exposure to teaching to this extent have a certain influence on their take on the importance of explanations in teaching. It is thus recommended that similar study could be replicated with different stakeholders in teaching like newly graduated trainee teachers, in-service teachers as well as school auditors.

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