

# Perception of Student Attributes towards Short Video Presentation Assignment in Machine Component Analysis Subject

**M.F. Mat Tahir<sup>a\*</sup>, N.K. Khamis<sup>b</sup>, M.R. Mohammad Rasani<sup>c</sup>, M.A. Mohd Sabri<sup>d</sup>**, <sup>a,c,d</sup>Centre for Integrated Design and Advanced Mechanical System, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia, <sup>b</sup>Center for Material Engineering and Smart Manufacturing, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia,

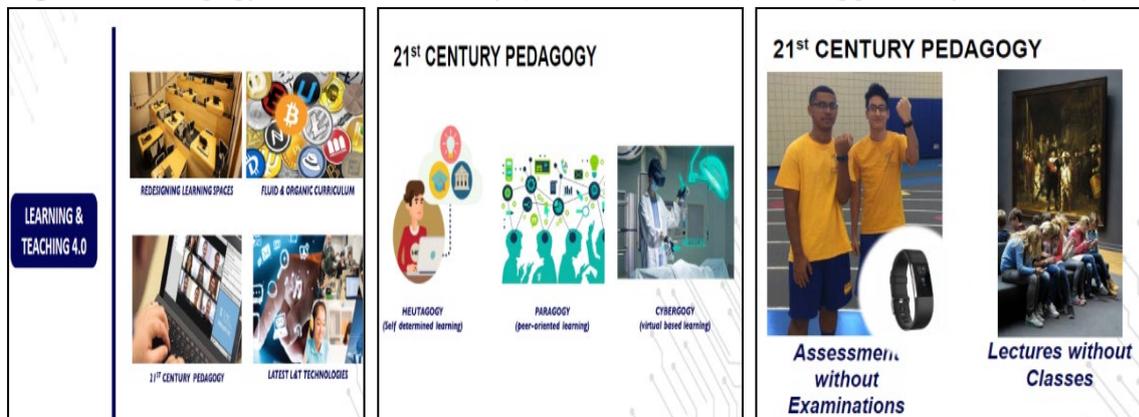
The challenges in pedagogical measurement are changing with the new education environment called Education 4.0. The non-examination assessments and lecturers without classes have emerged as more of a trend in teaching and learning 4.0. Thus, this study examines the perceptions of student attributes towards the use of short video as a presentation tool in subject assignment as part of non-examination assessments. A total of 73 students from the Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment, participated in this study. These groups of students were required to perform video based assignments as a small part of the course assessment. The respondents were required to fill in the questionnaire survey form at the end of the semester. There are two main sections in this survey form, consisting of Section A (demographic background) and Section B (student's perception of attributes based on four conceptual frameworks; capability, satisfaction, readiness and fairness. From the results, in general, students have a positive agreement about their perception of capability, satisfaction, preparedness with this type of task and assessment. However, there is room for improvement in the perception of fairness because they tend to be neutral and maybe doubt that will be able to be fairly judged. There is an opportunity for educators to explore and formulate more comprehensive assessment in order to make the students feel they are being evaluated fairly and provide a win-win situation to educators and students.

**Key words:** *Pedagogy, perception, capabilities, satisfaction, readiness, fairness.*

## Introduction

The current education environment has been transformed from traditional learning to more modern approaches. With the rapid development of the world, it is time to look ahead at emerging trends that will impact the education environment in the 21st century. In Education 4.0, pedagogical measurement challenges are also changing and may involve non-examination assessments and non-class lectures as shown in Figure 1 (Menteri Pendidikan Tinggi Malaysia, 2018) below.

**Figure 1.** Pedagogy in the 21st century (Menteri Pendidikan Tinggi Malaysia, 2018)



Technology is rapidly changing the landscape of the younger generation's education, in and out of higher education system. A new generation of students, the majority of whom are from Generation Z prefer to interact with a new trend in the learning environment. According to previous studies, Generation Z prefers to perform online activity, such as live-streaming, but have limitations on attention span when studying (Eckleberry-Hunt and Tucciarone, 2011; Geck, 2006). Ting, suggested education practitioners need to use teaching and learning methods that are more relevant to Gen-Z's lifestyle (Choo Ting, 2013; Ahmed, et.al 2017). Therefore, this scenario becomes a challenge to academics to ensure their course delivery is interactive and attractive to this current generation.

Short video and animation presentation is an alternative assessment adaptive with the new generation's preferred learning environment. Students are given an opportunity to express and perform a topic of discussion or task in a video or animation type of presentation. While providing chances to utilise the technology, students can use their creativity to plan their presentation as comprehensively as possible. This also provides opportunity to the academic to have ample time to assess the student presentation according to their schedule unlike the conventional type which needs a specific time and room to perform the evaluation.

However, this kind of assessment is normally planned by education practitioners and student only deliver the task that they were asked to deliver. Hence, this study is conducted to identify student perception on the task of presenting in the form of short video. All students involved in this study have at least one previous experience delivering their task in the form of video presentations. Figure 2 below shows examples of short video produced by the students.

**Figure 2.** Example of various short video and animation presented by students.



## Literature Background

A number of past studies had focused on the implementation of student-centred learning in terms of approach, skill development, job opportunity and others (Abdullah, 2004; Syidam, 2008; Alizah and Zamri, 2016). Maria, defined student-centred learning as an approach to explain and comprehend the teaching and learning process, either in or out of the class (Maria et al., 2014). Furthermore, this approach requires active participation from the student in order to ensure the teaching and learning process is successful and achieves the objective. In evaluating the communication element during the learning and teaching process, the need for students presenting or communicating directly (communication face to face) or indirectly (acting rather than saying) is inevitable.

Presentation is one of the evaluation elements in every task given in each course. Standing face to face communication while presenting the task requires the student to be more confident to deliver their work progress and task's contents and can result in the student

feeling restless if they are not well prepared. Even well prepared presenters sometimes have difficulty while presenting their presentation. Moreover, some students are not really comfortable to present their idea based on the slide only. In order to provide some options, presentations based on the short video and animation may help to improve their confidence level and provide new experiences for them. This approach can also create a less - stressful scenario and provides a positive vibe as well as entertainment in creating their own video (Doug, 2017; Clovis, 1997). Furthermore, Berk mentioned that video-based assignments may bring the producer (in this case, to the student) a feeling of ownership to be part of video making, as well as taking pride in their success (Berk, 2009).

The potential for learning at a suitable pace and the opportunity to explore or repeat what is being said is one of the factors for growth in learning using video either online such as Khan Academy or in class (Khan, 2011; Tina Seidel et al., 2013). Syamsulaini, summarizes from his findings regarding video based teaching and student-centred learning the five purposes of video: increase the number of reading and teaching materials, assist in the development of students' basic knowledge, enhance understanding, improve motivation and student enthusiasm, and finally promote educator effectiveness in teaching (Syamsulaini and Mashitoh, 2016). While learning through video has the potential to increase focus and effectiveness for students, learning and measurement through video production by students is also increasingly gaining attention in today's student-based learning pedagogy.

Observations from Allam and Willmot demonstrate that video production can instill a variety of student soft skills (including problem solving skills, working in groups and communication skills) and can increase student motivation (Allam, 2006; Willmot et al., 2012). Student motivation is one of the key elements for achieving deep learning and this is potentially achieved using video assignment (Kuchel et al., 2014). In other studies, video assignments had a positive impact on students, including increasing their learning focus and learning experience, which could foster learning more effectively (Aksel and Gürman-Kahraman, 2014; Ellis et al., 2004; Li et al., 2014). In terms of the student's attributes towards the video project, a few studies conducted by past, researchers show that students were appreciated and be more creative about the video project, making even though initially there were some hesitations and anxiety due to lack of experience and capability in producing the video (Cohen, 1992; Reyna Zeballos et al., 2016; Khalid, 2014). In addition, this process also assists them in improving and strengthening their understanding of the subject's concepts that have been learned during class.

## **Methodology**

### ***Respondents***

This study used a survey as the research design with stratified sampling as the sampling design. The survey form was distributed and conducted on Third Year students from the Department of Mechanical and Materials Engineering. These groups of students were required to perform video based assignment for Machine Component Analysis subject. A total of 73 students who were enrolled in the subject participated in this study.

### ***Respondents***

The respondents were required to fill in the questionnaire survey form at the end of the semester. Links for this form can be retrieved from the website, which has been shared among the course academics and students. There are two main sections in this survey form, consisting of Section A (demographic background and experiences in video based assignment) and Section B (15 questions regarding the student's acceptance, perception based on four conceptual framework by using Five Point Likert Scale: 1-Very disagree to 5-Very agree).

### ***Analysis***

The Comprehensive analysis was conducted to respond to the research hypothesis. In addition, this analysis was performed to investigate whether there is a relationship between one variable to another variable. In this case, there are two types of statistical analysis that have been carried out in this study; the chi square test and the Pearson correlation test. The Pearson correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by  $r$ . The Pearson correlation determines the strength of association based on the  $r$  value. According to Cohen, association between variables can be interpreted either very strong, strong, moderate or weak based on the correlation coefficient,  $r$  as shown in Table 1 (Cohen, 1992) below.

**Table 1:** Correlation coefficient interpretation

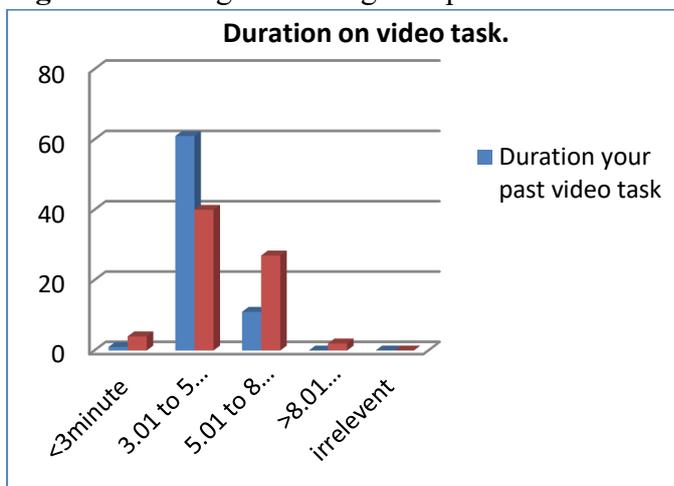
<b>Correlation coefficient value (<math>r</math>)</b>	<b>Association</b>
-0.3 to +0.3	Weak
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.9 to -0.5 or 0.5 to 0.9	Strong
-1.0 to -0.9 or 0.9 to 1.0	Very strong

## Results and Discussion

This study was conducted to research the perception of student attributes regarding a presentation task submitted in the form of a short video. In part A, the questions establish the demographic of respondents. Out of 73 students, 73% of respondents are male and the remaining 23% are female. From Figure 3, all of them have done this video based assignment previously. Approximately 80% have experience creating a video task in between 3 to 5 minutes. However, for question regarding suitability of the time range for video presentation, only 55% feel that 3 to 5 minutes is suitable for video presentation.

Based on the feedback from student, 3 to 5 minutes is really short time period and cannot cover all elements in the given task. Yet, based on a different point of view, basically, the students are required to be very selective and present only important information by delivering its contents in an interactive way. This is because, they were also required to deliver their tasks in report form for the details. For academics, this feedback can help to provide suitable and complete guideline in ensuring the task style is more precise, comprehensive and correct in the future.

**Figure 3.** Average time range for past video task and expected time range in the futur



### *Analysis for Every Question in Each Category*

In part B, four conceptual frameworks are presented in this study with each framework requiring evaluation from the respondent. At least three questions have been asked for each framework. The analysis includes the percentages for every answer selection, mean and standard deviation. Other than that, Pearson correlation had also been carried out to find the correlation between each question.

***Association between questions in capability category***

From 15 sets of questions, questions 1, 2, 5 and 6 are regarding their perception of their capabilities in general. Table 2 (a) below shows the cross tabulation results for questions under capability category.

**Table 2(a): Results on capabilities perception**

<b><i>Question</i></b>	<b>Very disagree (1)</b>	<b>Disagree (2)</b>	<b>Moderate (3)</b>	<b>Agree (4)</b>	<b>Very agree (5)</b>	<b><i>Mean</i></b>	<b><i>Standard Deviation</i></b>
<b>Q1.</b> I feel this type of task makes me more stressful	10.1%	25.7%	47.3%	16.0%	0.9%	<b>2.685</b>	<b>0.941</b>
<b>Q2.</b> I need a lot of time to complete this assignment	4.4%	22.0%	27.6%	39.5%	6.5%	<b>3.274</b>	<b>1.031</b>
<b>Q5.</b> I learn new information in producing this form of assignment	3.5%	9.1%	55.2%	29.8%	2.4%	<b>4.164</b>	<b>0.881</b>
<b>Q6.</b> This assignment gives me the opportunity to be more creative in presenting the idea of work	6.9%	2.5%	10.1%	54.2%	26.3%	<b>4.110</b>	<b>0.875</b>

Based on Table 2 (a), the majority of the respondents feel moderately stressful when conducting this type of task (Q1). However, from the standard deviation obtained at 2.685, they tend to disagree and slightly neutral for this statement. This illustrates that this form of assignment is almost identical to other forms of assignment without giving them extra burden. For Q2, 39.5% of the respondents show agreement that this type of assignment requires a lot of time to complete. This is appropriate where they need to increase their preparation time to record and edit their videos to get the best results. For the rest of the questions, on average, they agree with this form of assignment because it gives them new knowledge and the opportunity to be more creative and innovative in the production of an assignment.

**Table 2(b):** Correlation table in capability category

		Q1	Q2	Q5	Q6
Q1	Pearson Correlation	1	.477**	.209	.076
	Sig. (2-tailed)		.000	.077	.521
Q2	Pearson Correlation	.477**	1	.335**	.228
	Sig. (2-tailed)	.000		.004	.052
Q5	Pearson Correlation	.209	.335**	1	.737**
	Sig. (2-tailed)	.077	.004		.000
Q6	Pearson Correlation	.076	.228	.737**	1
	Sig. (2-tailed)	.521	.052	.000	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Next, Table 2 (b) above shows a Pearson correlation table for this category. Based on Table 2(c), there is a weak correlation between Q1-Q5 ( $r=0.209$ ), Q1-Q6 ( $r=0.076$ ), Q2-Q6 ( $r=0.228$ ). Furthermore, there is a moderate correlation between Q1-Q2 ( $r=0.477$ ), Q2-Q5 ( $r=0.335$ ) and a strong correlation between Q5-Q6 ( $r=0.737$ ).

### *Association between questions in satisfaction category*

Table 3 below shows the cross tabulation results under satisfaction category in this study. Generally they tend to agree on the quality of their presentation with nearly 50% of the respondent feeling satisfied with the quality of the video presentation (Q3) and are satisfied with the wider reachability of the targeted audiences/viewers for their assignment. They also tend to agree to feel happier because they have the opportunity to choose and send their best work and more than 60% of them agreed that they are very glad when hearing the comment from other friends (Q4).

**Table 3:** Results on satisfaction perception

<i>Question</i>	Very disagree (1)	Disagree (2)	Mode rate (3)	Agree (4)	Very agree (5)	<i>Mean</i>	<i>Standard Deviation</i>
<b>Q3.</b> I am more satisfied with the quality of my presentation	5.4%	10.0%	28.6%	45.2%	10.8%	<b>3.562</b>	<b>0.986</b>
<b>Q4.</b> I am glad my friends can give a comment on my assignment	3.5%	0.9%	23.5%	63.7%	8.4%	<b>3.808</b>	<b>0.776</b>
<b>Q10.</b> I feel happier in the assessment because I have the opportunity to just send the best work	4.4%	5.4%	17%	50.8%	22.4%	<b>3.849</b>	<b>1.009</b>
<b>Q11.</b> I'm excited about my assignment which can be reached by more viewers	4.4%	4.4%	40.4%	36.4%	14.4%	<b>3.575</b>	<b>0.956</b>

Next, the Pearson correlation between questions for this category is calculated. There is a moderate correlation between Q3-Q4 ( $r=0.397$ ), Q3-Q10 ( $r=0.310$ ), Q3-Q11 ( $r=0.360$ ), Q4-Q10 ( $r=0.424$ ), Q10-Q11 ( $r=0.566$ ) and Q4-Q11 ( $r=0.6$ ).

***Association between questions in readiness category***

Table 4 below demonstrates the cross tabulation results under readiness category in this study. About half of the students look forward and confident to work with this type of assignment. Majority (agree and very disagree) is seen more prepared and confident in the presentation of video footage compared with a conventional presentation without video. Nevertheless, they are relatively neutral when asked for their willingness to do more such tasks.

**Table 4:** Results on readiness perception

<i>Question</i>	Very disagree (1)	Disagree (2)	Moderate (3)	Agree (4)	Very agree (5)	<i>Mean</i>	<i>Standard Deviation</i>
<b>Q7.</b> I am more confident with the video presentation	3.5%	3.5%	19.8%	50.8%	22.5%	<b>3.904</b>	<b>0.915</b>
<b>Q8.</b> I am more comfortable to present in recording form, rather than direct presentation without video	6.9%	8.2%	26.3%	35.1%	23.5%	<b>3.671</b>	<b>1.143</b>
<b>Q12.</b> I am looking forward to work with this type of video based assignment in the future	6.9%	6%	42.0%	33.6%	11.5%	<b>3.425</b>	<b>0.956</b>

The Pearson correlation between questions were also measured with moderate correlation between Q7-Q8 ( $r=0.514$ ), Q7-Q12 ( $r=0.539$ ) and Q8-Q12 ( $r=0.498$ ) noted.

***Association between questions in fairness category***

Finally, Table 5 below shows the cross tabulation results under the fairness category in this study. This perception of fairness seeks to see the extent to which their perceptions feel either they are getting justice in the due diligence for this form of assignment. In general, for all the three questions in this perception of fairness, they tend to feel neutral. They are neutral to the question of suitability of individual or group assignments. In general, they feel that it is not a matter of individual or group assignments.

**Table 5:** Results on fairness perception

<i>Question</i>	Very disagree (1)	Disagree (2)	Moderate (3)	Agree (4)	Very agree (5)	<i>Mean</i>	<i>Standard Deviation</i>
<b>Q9.</b> I feel that I can be better evaluated by lecturer in this way	11.8%	4.7%	37.0%	41.4%	5.1%	<b>3.466</b>	<b>0.987</b>
<b>Q13.</b> I feel that this	16.0%	12.9%	23.2%	34.8%	13.1%	<b>3.055</b>	<b>0.978</b>

form of work is more appropriate as an individual assignment than a group (individual marks)				%	%		
<b>Q14.</b> I have no chance to defend my argument in this presentation form	3.5%	17%	36%	36.4%	7.1%	<b>3.301</b>	<b>0.989</b>

### Conclusion

Based on the findings of the perceptions in the four frameworks, generally, students agree with their perception of capability, satisfaction and readiness, which shows that they are interested in this task, willing to complete and feel satisfied with their video production. Nevertheless, for the perception of fairness, some enhancement can be made because they are still in doubt and feel that they have not been entirely fairly judged in this form of task. Statistical analysis also suggests there is either weak or moderate correlation between questions, except between Q5-Q6 highlighting strong correlation between creativity and student learning during the process of completing their assignment. To conclude, further studies focusing on the perception of justice and the production of suitable assessment rubrics need to be carried out as usage of digital and virtual tasks will increase rapidly and become essential in the future.

### Acknowledgement

The Author would like to thank the contribution of research grants from Universiti Kebangsaan Malaysia for supporting part of research activities.



## REFERENCES

- Abdullah, I. (2004). Pembelajaran Berpusatkan Pelajar dan Kaitannya dengan Pembangunan Diri dan Peluang Pekerjaan. In: Seminar Penyelidikan Pendidikan Guru Peringkat Kebangsaan 2004, City Bayview Hotel Langkawi.
- Aksel, A. & Gürman-Kahraman, F. (2014). Video Project Assignments and Their Effectiveness on Foreign Language Learning. *Procedia - Social and Behavioral Sciences*, 141: 319 – 324.
- Ahmed, Z., Su, L., Rafique, K., Khan, S. Z., & Jamil, S. (2017). A study on the factors affecting consumer buying behavior towards online shopping in Pakistan. *Journal of Asian Business Strategy*, 7(2), 44-56.
- Alizah, L. & Zamri, M. (2016). Student-Centered Approach in the Teaching and Learning of the Malay language To Develop Soft Skills among Undergraduates. *PENDETA Journal of Malay Language, Education and Literature*, Jilid 7, 2016 / ISSN 1823-6812 (25-34).
- Allam, C. (2006). Using filmmaking to teach students about Shakespeare, urban regeneration and other stuff! *Proceedings from 6th International DIVERSE Conference*, Glasgow Caledonian University, Glasgow, UK pp163-170.
- Berk, R.A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5(1): 1-21.
- Choo Ting, N. (2013). Classroom Video Project: An Investigation on Students Perception. *Procedia - Social and Behavioral Sciences*, 90: 441-448. 10.1016/j.sbspro.2013.07.113.
- Clovis, D. L. (1997). Lights, television, action! *Educational Leadership*, 55(3): 38-40.
- Cohen, L. (1992). Power Primer. *Psychological Bulletin*, 112(1): 155-159. New, J. (2006). Film school: The silver screen inspires young minds to think big. *Edutopia*, 1(9), 2023. Retrieved from: <http://www.edutopia.org/film-school>.
- Doug, H. (2017). Key Trends for 2017: Innovation in Educational Technology, Strategy, Alignment and Planing [Online]. Available: <https://www.trainingindustry.com/magazine/nov-dec-2016/key-trends-for-2017-innovation-in-educational-technology>.
- Eckleberry-Hunt, J. & Tucciarone, J. (2011). The Challenges and Opportunities of Teaching “Generation Y.” *Journal of Graduate Medical Education*, 3(4): 458–461. <http://doi.org/10.4300/JGME-03-04-15>.
- Ellis, G.W., Lee, K.S. & Tham, A. (2004). Learning Engineering Mechanics Through Video Production. 34th ASEE/IEEE Frontiers in Education Conference (Savannah, GA).
- Geck, C. (2006). The generation Z connection: teaching information literacy to the newest net generation. *Teacher Librarian*, 33(3): 19-23.



- Khalid, A. (2014). Use of student generated videos to enhance teaching quality in aerospace engineering classes. In ASEE southeast section conference American society for engineering education.
- Khan, S. (2011). Let's use video to reinvent education. [Online]. Available: [https://www.ted.com/talks/salman\\_khan\\_let\\_s\\_use\\_video\\_to\\_reinvent\\_education#t-154067](https://www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education#t-154067).
- Kuchel, L.J., Stevens, S. K., Wilson, R. & Cokley, J. (2014). A Documentary Video Assignment to Enhance Learning in Large First-Year Science Classes. *International Journal of Innovation in Science and Mathematics Education*, 22(4): 48-64.
- Li, Y.W., Mai, N. & Tse-Kian, N. (2014). Impact of learner-centred teaching environment with the use of multimedia-mediated learning modules in improving learning experience. *Jurnal Teknologi*. 68(2), pp. 65-71.
- Maria, C.A., Samsilah, R. & Tajularipin, S. (2014). Strategi pengajaran pembelajaran di institusi pengajian tinggi: Satu anjakan paradigm. *Malaysian Education Dean Council Journal*, 8: 101-115.
- Menteri Pendidikan Tinggi Malaysia, (2018). Amanat Menteri Pendidikan Tinggi, 2018. Presentation Slaid. 2018. [Online]. Available: <https://www.mohe.gov.my/muat-turun/awam/teks-ucapan-dan-slide/2018/amanat-2018/437-amanat-menteri-pendidikan-tinggi2018?path=awam/teks-ucapan-dan-slide/2018/amanat-2018>.
- Reyna Zeballos, J.L., Meier, P., Geronimo, F. and Rodgers, K., (2016). Implementing digital media presentations as assessment tools for pharmacology students. *American Journal of Educational Research*.
- Syamsulaini, S. & Mashitoh, H. (2016). Video-Based Teaching in Student-Centered Learning: Analysis and Critical Review. *Journal of ICT in Education (JICTIE) ISSN 2289-7844*, 3(2016): 24-33.
- Syidam, A. (2008). Pembelajaran Berpusatkan Pelajar. [Online]. Available: <http://www.scribd.com/doc/8535938/PB-Berpusat-Pelajar>.
- Tina Seidel, T., Blomberg, G. & Renkl, A. (2013). Instructional strategies for using video in teacher education. *Teaching and Teacher Education*, 34: 56-65.
- Willmot, P., Bramhall, M. & Radley, K. (2012). Using digital video reporting to inspire and engage students. *The Higher Education Academy*. [Online]. Available : <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.643.9840&rep=rep1&type=pdf>.