

What if Mathematics is Learned using ODL in Hogwarts?

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1.0 Introduction

Mathematics is always great and fun as pictured in Hidden Figure movie, with excellent understanding the applications are enormous. It even gave impacts on space travel and its role crafted in modern history. However, when the theories and concepts are misunderstood, it changed to Nightmare on the Elm Street. Leading the students to take it or leave it.

In learning mathematics, teacher plays an important role to deliver the content in the most understandable and creative ways of teaching to gasp the students' attention (Preciado-Babb, Metz, Sabbaghan, & Davis, 2018). Many methods of teaching have been implemented that suited the teachers' and students' preferences (Sankar & Karri, 2016; Khoshaim & Subhi-Aiad, 2018). Even in the current situation of Covid-19 pandemic that lead to Movement Control Order (MCO) by the government, the learning must continue. Students stay safe at home, and teachers continue to deliver the courses.

One of the methods used is Online and Distance Learning (ODL) using learning management system (LMS). From the views of us as mathematics teachers, here are some tips for the teachers and the students in learning mathematics through ODL. In order to make it interesting, we used *Harry Potter* movie as the narrative of the situation and tips in commencing ODL with the students.

2.0 Tips for ODL: The story begins

Can you imagine teaching mathematics in Hogwarts using ODL? For some reason, the students in Hogwarts need to stay home because of the rage of the Death Eaters. Albus Dumbledore urge all the professors (teachers) to continue teaching despite the situation. Due to that, we started to google the internet to find the best methods that going to suit our teaching preference. We also asked the students which platform do they comfortable with.

2.1 The wand.

Every sorceress must have their own wand and the wand will always choose their owner. It is a magical object and its role is to channel the magical powers. But with ODL, our *wands* have changed. We need gadgets as smart phones, computers, laptops, tablets, digital writing pad or pen tablets with variety of brands to choose from as our magical object.

Smart phone is good enough for students, if it can play videos and can download required apps needed. But with additional gadget such as laptop or computer, it could be an advantage as they don't have to rely on only one gadget. However, make sure your *wands* have enough space and data to view all the videos. Learning mathematics through video usually require you to watch the video repeatedly in order to understand the solutions.

Mathematics is a subject that require long list of solution and it is important to ensure students understand each step. Therefore, most teachers will seek gadgets that can enable them to scribble while teaching online. The different is, we are the one who gets to choose our *wands* because each of us do have different preference and depends on owns financial budget. Well, we are not necessarily having to buy expensive and branded gadgets, even a smartphone and a pen can still be good enough to develop our teaching videos. It's not that we can wave our *wands* with *Wingardium Leviosa!* and suddenly our teaching materials are completed. All we need are good planning and some creativities in preparing materials in ODL (Hussin, 2018). If the students can view our video and understand the contents, at least half of the learning is achieved. At the end of the day, that is the use of our *wands*, to deliver magics!

Students' tips: Be clear with your teachers' chosen LMS and learn to use it. Download any apps that required to be used during ODL. Different teacher, may use different platform, so please make a list for all courses and their teaching platforms.

Teachers' tips: List out your preferable gadgets based on your own budget. Make sure it fits with your type of LMS chosen and get comfortable in using it. Clearly inform the student of our teaching method to avoid confusion, besides they also have other courses too.

2.2 The class.

Handling the class is challenging in ODL as the way of learning is without being face-to-face with the students. Teachers have many options in communication technology that can replaced conventional way of teaching (Stosic, 2015). Most common platform of online meeting are Google Meet or Zoom where teachers are allowed to make video conferencing with their students from wherever they are (Platin J-C, 2018). We don't have to throw *Floo Powder in a fire connected to the Floo Network* anymore to meet the students, just share the link with our *wands* and there you are, a virtual class full of our students.

However, teachers must organize and inform the students the date and time of your future meeting earlier (Wang & Chen, 2011). Always discuss with the students the most convenient time to do the meeting. Plan the content of your meeting so it won't take longer time in your meeting.

Either the students are from *Slytherin, Gryffindor, Ravenclaw* or *Hufflepuff*, they all need to attend ODL class. And students please, don't wear your *invisible cloak* during the class. We need to make sure that we don't talk alone like talking to a brick wall. At least show your face and nod when asked. Sometime teachers just missed their students.

Students' tips: Make schedule of all your course classes. Please inform your teachers if there is any clash of time. Be prepare for your class and give responses if asked by the teachers. Do not stay anonymous as this will make the teachers anguish.

Teachers' tips: Plan and organise the time and content wisely. Students' time and internet data are also valuable.

2.3 Quidditch game.

Mathematical exercises are like playing *Quidditch game*. Students need to work hard, practice and make efforts in doing all the questions in the tutorials. Like in the game, you only scored when you throw the *quaffle* into the hoops, as like you only get marks when your

answers are correct. Teachers can guide the students through videos and supplementary materials given to them (Barlow & Lane, 2007). Open the opportunities for them to asked questions. We as teachers need to understand that this is also a new norm for the students. Like us, they may also struggle to the new study habits, just like balancing and flying on the *magic broom*. Consistently guide the students and give motivation to them. This may lighten their spirit in the *game*.

However, players need to be aware not to be hit by the opposing *bludger*, means, do not get caught in misconception in mathematics if not you will lose the marks. Always refer to your teacher and friends on your solutions. The most important thing is practice, practice and practice! The game only ends when the *golden snitch* has been caught, just like final exam. Maybe you are the lucky one who can catch the *snitch*.

Students' tips: Practice make perfects. Do your tutorials and cross check with your friends. Ask questions whenever you have problem in the solutions. Do not give up the questions. Perhaps the similar question will appear in the final exam. Remember, there is no magic in success.

Teachers' tips: Continuously encourage students to do mathematics questions in tutorials. Always ready to answer their queries and give adequate number of examples to improve their understanding.

3.0 Conclusion

During this COVID-19 pandemic, teachers play a crucial role to make sure the learning process continues without disruption. Teachers try to explore various tools in preparation for the lesson materials and various platforms to deliver the lessons in the most effective ways. For teaching mathematics via online class, teachers should choose teaching methods that suit best their teaching, what with to keep students able to grasp the mathematical concepts and able to solve the related mathematical problems. Students should also play an important role in adopting this new learning process so that in the end the lesson outcomes can be achieved.

There is neither special potion nor spell for you to success in mathematics especially during this semester. Always think positive. Dumbledore once said in Harry Potter & the

Prisoner of Azkaban, “*Happiness can be found even in the darkest of times, if one only remembers to turn on the light.*” Therefore, don’t stay in the dark.

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