Applications of Mobile Learning Devices and Apps in Teaching

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I. Introduction

I am very fortunate to have the opportunity to join the New Taipei City Educators Delegation in 2017 to observe eight different schools in New Jersey and Massachusetts, including elementary, middle, and high schools. I want to thank the Education Department of New Taipei City Government and the English Curriculum and Instruction Consulting Team of New Taipei City for making this happen. The reason for writing this topic is because I am surprised by how common laptops, iPads and Apps are used in teaching. It appears to be a trend for American classrooms, however, it's not popular in Taiwanese classrooms.

With the growing popularity of wireless internet, it is possible and convenient for students to use mobile learning devices in and out of the classroom. According to an article (Sung, Y., Chang, K., & Liu, T., 2016), MLDs (mobile learning devices) include laptops, personal digital assistants (PDAs), tablet personal computers (tablet PCs), cell phones, and e-book readers. The MLDs mentioned in my report means laptops and tablet PCs in particular because they are the MLDs that are being used in the classrooms of the schools I observed during this trip.

The following contents consists of four parts. First, the observations of how MLDs and learning Apps are applied in teaching activities. Second, the prerequisites for a successful application of MLDs in teaching. Third, the advantages of applying MLDs and learning Apps in teaching. Finally, the reflection and conclusion of the above.

II. How MLDs and Apps Are Applied in Teaching Activities

The first part is my observations on how MLDs are put to use in different

activities in some of the schools that I visited. The second part covers a brief introduction of the learning Apps/websites, and my observations on how they are used in different activities and subjects.

i. Applying MLDs in Teaching

How often are MLDs used in the classroom? Different schools have different approaches to this issue. Students at Sherwood Middle School use individual iPads at school and at home, including summer and winter vacations. Some other schools only let students use laptops at schools. Not all schools have MLDs for every student, and some schools purchase a set of laptops for different classrooms to share.

The frequency of MLDs used in the classrooms can differ. For instance, teachers at Sherwood Middle School handle this differently. A teacher mentioned that she uses iPads in her science class half of the time; and she uses more traditional pen-and-paper method in her math class because her students have to write their math journals. Another teacher shared that she combines iPads with traditional pen-and-paper method. Her students can use a pen to write down their thoughts, and then use the speech-to-text feature of iPad to make responses. A social studies teacher said she uses iPad 80 percent of the time in her class.

In the eight schools that I visited, there were some ways that MLDs could be used in teaching activities, they were as follows:

Howell Township Middle School's robotics class had students divided into groups and worked on building a robotic truck that could be operated by a remote controller. Students used laptops to connect with the truck that they were building, and they had to modify their programming on the laptop so that the truck could meet the needs of their new design.
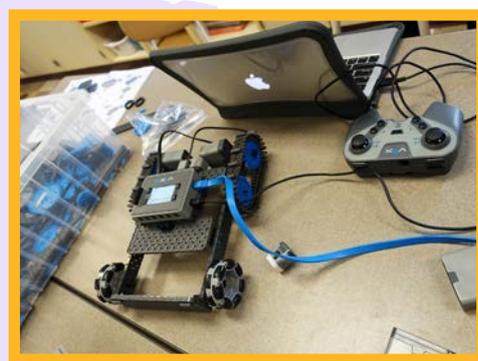

At Ramtown Elementary School, students used wires with alligator clips to connect to a Makey Makey metal board that was connected to the laptop by an USB port. The alligator-clip wires were also connected to five bananas. This completed a

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circuit so that when we touched the banana, the laptop thought that we were pressing a key from the laptop's keyboard and thus controlled the Makey Makey piano website (https://makeymakey.com/piano/) to make the corresponding piano key sound.
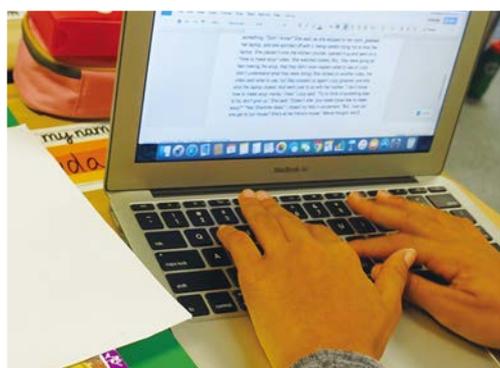
In a writing class that we visited, the students were using the Google Docs to work on their novel writing. The teacher could view and edit everyone's writing online. It was much easier to edit students' writings using a computer because of its flexibility to delete, add, and copy-and-paste words anywhere in the writing without making any scribbling mess.


A social studies teacher at Ramtown Elementary School had her students make their own Power Point on Google Docs and answer the questions she posted online. Students had to choose a certain Native American tribe and read about the information of that tribe on their social studies textbook. They could also find related pictures online for their Power Point presentation. The students working on the same tribe could sit together to discuss about it.
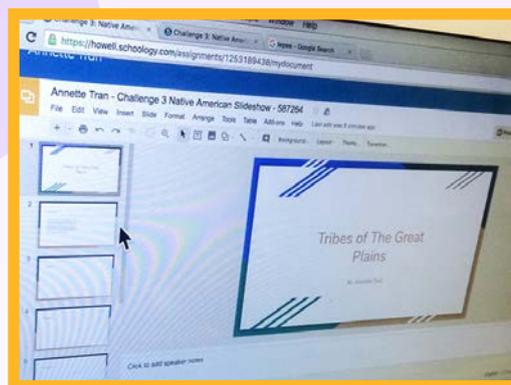
The students in a science class at Howell Middle School were working on different tasks and topics related to science. A certain group was using their laptops to help them model the experiment on pressure, then they had to write down their findings on the worksheet.

Another science class at Howell Middle School, the students were divided into groups to find information on their laptops and work on their group poster about dinosaurs' evolution.
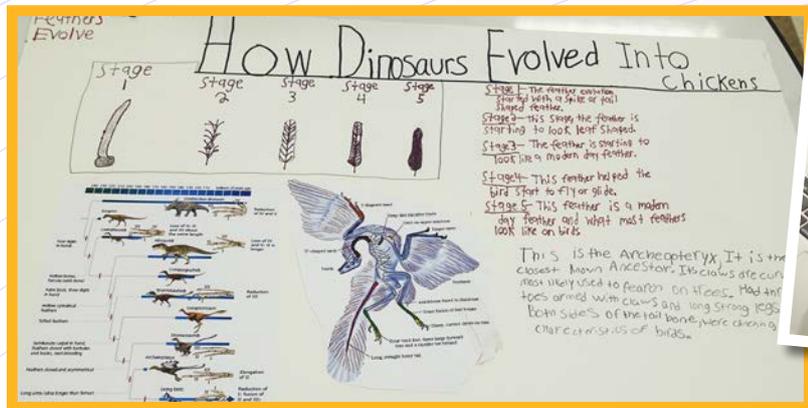

ii. Applying Apps in Teaching

I saw various Apps and websites being used in the classrooms that I visited, namely Schoology, ClassDojo, Raz-Kids, Kahoot!, Flipgrid, Scratch, Google Docs, and iChineseReader. The following Apps and websites are the ones I choose to elaborate more about because they are either very useful or appear interesting to me:

(i) Schoology – Learning Management Platform

Schoology is a free and cross-device website/App for learning management. Almost every school that I visited used Schoology. This shows that it's quite a useful and user-friendly tool. It's like a platform that connects classroom management, online learning and social network together. Teachers can manage their own courses by uploading learning materials in any forms (videos, PDFs, Power Points, etc.), homework assignments, announcements,

students' test, and grades. Every student has their own account to log in and add all the courses that they take. There is a digital folder for each course. Students can not only download learning materials, but also upload their homework. For more information about Schoology, please visit: https://www.schoology.com.
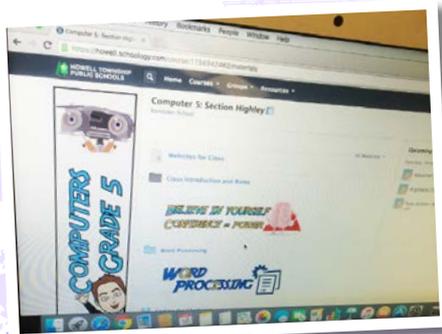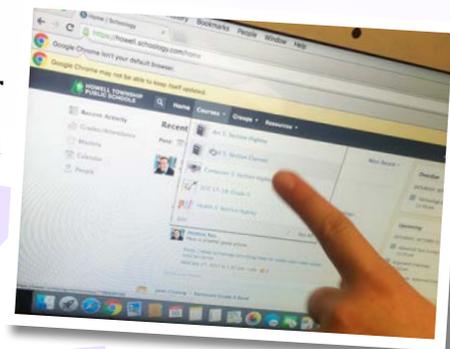
(ii) ClassDojo – Classroom Management Tool

ClassDojo is a free website/App for classroom management that can be used on any devices like tablets, laptops, and cell phones. It can help teachers build a classroom community by connecting with parents, students, and other teachers. ClassDojo helps teachers create a positive culture in class. Teachers can give students positive reinforcements like a "digital high-five", or a "digital medal" on their own digital portfolios when students are showing positive behaviors. Also, students can use their MLDs to add photos and videos on their own digital portfolios to share their learning and projects with parents and others. Moreover, teachers can share photos, videos, and announcements of the classroom instantly, or privately message any parent without having to exchange phone numbers. Messages can also be translated into any language. Finally, teachers can create their school community, by connecting teacher, school leaders and principals together.

A teacher from Josiah Quincy Elementary School showed us how she used ClassDojo and how her students loved this kind of reinforcement. For more information about ClassDojo, please visit: https://www.classdojo.com/zh-tw/?redirect=true.
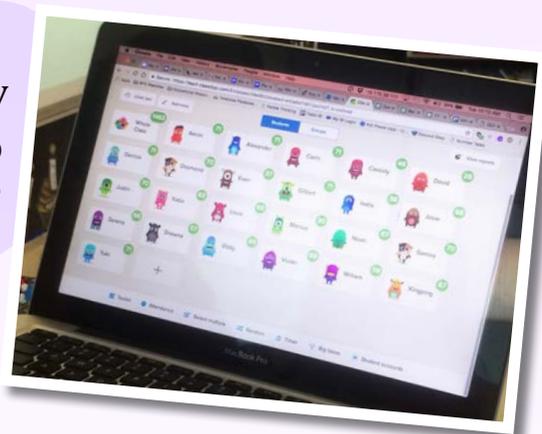
(iii) Raz-Kids – Comprehensive Leveled Reading Resources for Kids

Raz-Kids is a cross-devices platform that provides leveled reading materials and comprehensive quiz questions online for students. Raz-Kids has hundreds of eBooks divided into 29 levels of difficulty. Students can listen at their own pace and record themselves while reading out loud. After each reading, students take a quiz online related to the reading to check their comprehension level so teachers could plan reading activities according to their current needs. It also provides teachers with digital management tools to track students' reading progress.

A reading class at Ramtown Elementary School had students do their individual readings on Rad-Kids. With this tool, students really read at their own level and pace and it helped teachers solve the huge problem of level differences in the classroom. Individual laptops and this platform made differentiated instruction and assessment possible. For more information about Razkids, please visit: https://www.raz-kids.com.

(iv) Kahoot! – Game Based Learning Platform

Kahoot! is a free and cross-device online platform for learning. Students can engage in learning games with the whole class. That is, teachers can create their own multiple choice quizzes for any subject and have the whole class answer on their mobile device. Afterwards, it will show the whole class everyone's answers and even make a statistic frequency chart of it.

A teacher at Ramtown Elementary School used Kahoot! in her math class during our visit. Students were very engaged and excited. They can get immediate feedback from Kahoot! on whether they got their answers right or not. For more information about Kahoot!, please visit: https://kahoot.com.

(v) Flipgrid – Video Discussion Community for Classrooms

Flifgrid is an online platform that allows teachers to add any discussion topics for students to respond to by making a video message of themselves talking about the topic. The whole class can view other classmates' video responses and make further discussions with each other. This is a good tool for student engagement and formative assessment.

A teacher at Ramtown Elementary School had his students record a video message about who they think took away the mascot and the reasoning behind it. He had them write down their thoughts before making their own video so that the students were more prepared and structured when responding. More information about Flipgrid is provided on its website: https://info.flipgrid.com.
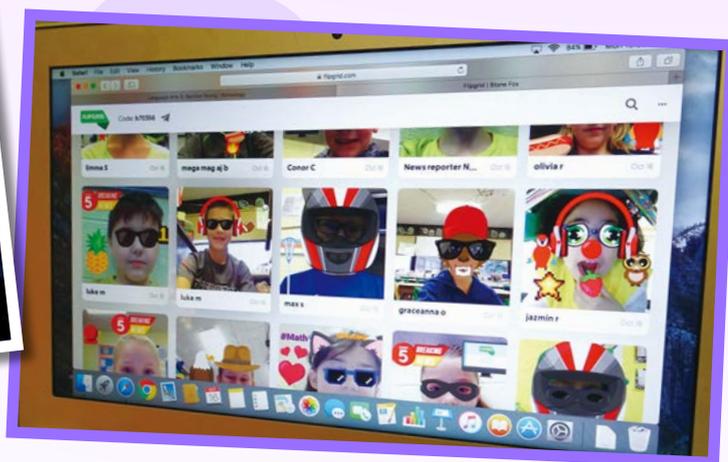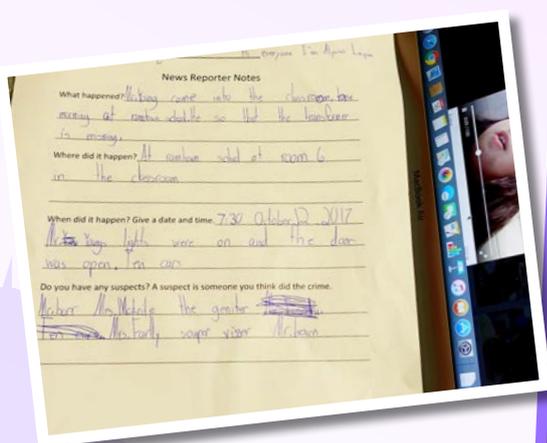
(vi) Scratch

Scratch is a free programming website available in over 40 languages, created by the Lifelong Kindergarten Group at the Massachusetts Institute of Technology's Media Lab. It is initially designed for kids from age 8 to16, but adults can also benefit from it. You can program games, animations, and interactive stories, then share it online.

At Howell Middle School, we observed a computer class where the teacher was teaching students how to use Scratch to program their own game. In Taiwan, my school Wen-De and some other schools are also teaching Scratch in computer

classes. When students learn programming, they also learn important skills for today and the future, such as creative thinking, systematical reasoning, and collaboration. For more information about Scratch, please visit: https://scratch.mit.edu.

From the above observations, it not only shows how versatile and useful MLDs can be when applied in teaching, but also how well-designed the teaching activities are for student-centered learning, cooperative learning, and differentiated instructions.

III. Prerequisites for A Successful Application of MLDs in Teaching

Applying MLDs in the classroom and teaching may appear effortless at first. However, the teachers from Sherwood Middle School said otherwise. According to their experiences, being prepared in this area is necessary. Therefore, in order to successfully apply MLDs in teaching, there should be some crucial preparations before introducing MLDs to the students. They are as follows:

(i) Teachers should be well trained in order to be ready to design and integrate MLDs in their teaching.

(ii) In order to cultivate students' "digital citizenship", technology department and teachers should also have the students and their parents fully understand the regulations for using MLDs before handing them out to the students. The school should only hand out MLDs to the students whose parents attended the notification meeting. This is a way to make sure that parents and the school are on the same page of monitoring students use of MLDs. The school should take away students' MLDs as a warning for not obeying the regulations.

(iii) The school's technology department, teachers, and parents should all take responsibility in monitoring students' use of MLDs. There should be an App that helps the technology department, teachers and parents to monitor what students are

doing on their MLDs.

(iv) Teachers should always modify their classroom management to adjust to students using MLDs. For instance, in the first few months of the school year, teachers should be very strict about the rules of using MLDs in the classroom.

(v) Teachers should have more freedom in designing teaching materials and less pressure on teaching schedules because many activities using MLDs would need more time to complete.

(vi) Teachers should carefully design teaching activities and always remember that not all teaching activities have to involve MLDs because they are only parts of the many teaching tools.

(vii) The school should prepare good iPad or laptop protectors to prevent MLDs from breaking after accidental crashes onto the floor.

IV. Advantages of Applying MLDs and Learning Apps in Teaching

According to the teachers we met, my observations, as well as articles from Wylie (2017) and Mehdipour & Zerehkafi (2013), there are some positive effects of applying MLDs and learning Apps in teaching:

(i) Portability

This feature makes it possible for students to learn at anywhere and anytime. Students can sit together in a group on the floor and each has an iPad or laptop in their hands.

(ii) Individualized Learning

MLDs enable teachers to conduct differentiated instruction more effectively because it make it easier for students to work at their own level and pace.

(iii) Motivate Students

It can be an alteration for the traditional pen-and-paper method, so students

are more interested in engaging in different activities involving MLDs. Students are also actively working on their tasks via MLDs, thus, it is a way to cultivate active and autonomous learners.

### (iv) Improve higher-order thinking and social skills

By using MLDs in various kinds of learning tasks, students cultivate creativity, critical thinking, collaboration, communication, and presentation skills in the process.

V. Reflection and Conclusion

From the above, it is clear that MLDs and learning Apps/platforms help teachers make student-centered learning possible, especially with all the advantages mentioned previously. Students can be motivated to discuss homework topics, make video responses, create their own games, as well as make Power Point presentations via MLDs and learning Apps. For teachers, they can facilitate differentiated instruction, grade students work, manage students learning process, etc. Moreover, parents could also monitor their children's learning by using them.

Learning technology is an unstoppable trend in the future, but could it replace the roles of teachers? This makes me wonder what roles teachers should take in the future. Therefore, teachers have to always keep in mind that teaching consists of a very important factor: interactions between the teacher and every student in the classroom. The "people" are what matters the most, not the technology tools. Technology tools are important, but they are just tools that facilitates teaching and learning. Teachers can still use other affective media to teach, not letting technology be the only approach in teaching. Technology cannot replace teachers' ability to design teaching activities, develop rapport with students, and make adjustments in the classrooms on the spot.

Although many schools in Taiwan can't afford to buy every student a laptop or tablet PCs, we can still learn from American teachers' core teaching values by designing group and individual differentiated tasks for our students to learn at their
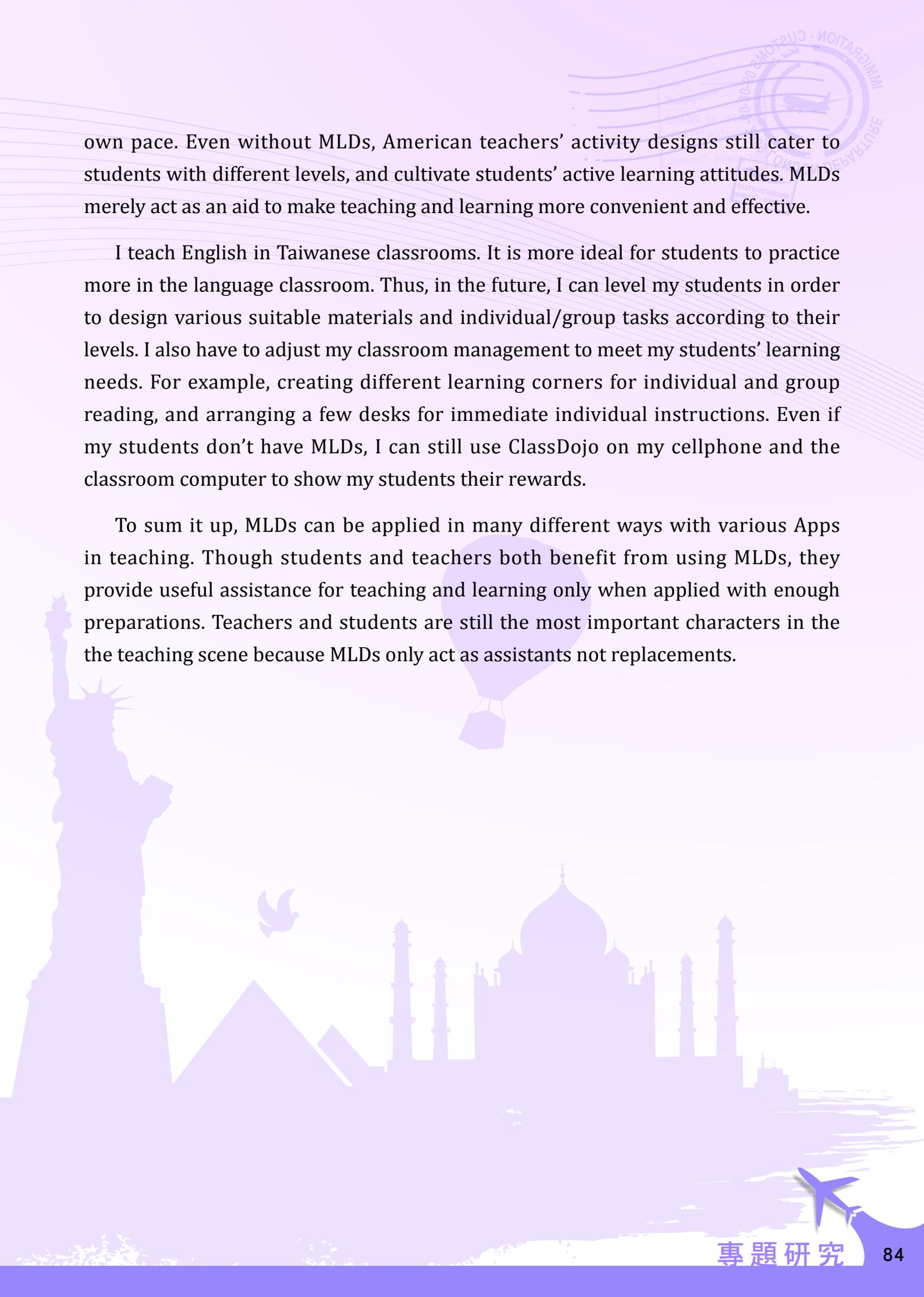
own pace. Even without MLDs, American teachers' activity designs still cater to students with different levels, and cultivate students' active learning attitudes. MLDs merely act as an aid to make teaching and learning more convenient and effective.

I teach English in Taiwanese classrooms. It is more ideal for students to practice more in the language classroom. Thus, in the future, I can level my students in order to design various suitable materials and individual/group tasks according to their levels. I also have to adjust my classroom management to meet my students' learning needs. For example, creating different learning corners for individual and group reading, and arranging a few desks for immediate individual instructions. Even if my students don't have MLDs, I can still use ClassDojo on my cellphone and the classroom computer to show my students their rewards.

To sum it up, MLDs can be applied in many different ways with various Apps in teaching. Though students and teachers both benefit from using MLDs, they provide useful assistance for teaching and learning only when applied with enough preparations. Teachers and students are still the most important characters in the the teaching scene because MLDs only act as assistants not replacements.

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