

# Movable Type Translingual Composition: "Being Multilingual is Like Having Many Friends"

Kit Martin, [kitmartin@u.northwestern.edu](mailto:kitmartin@u.northwestern.edu)

Dept of Learning Sciences, Northwestern University, Evanston, U.S.

Eva Lam, [evalam@northwestern.edu](mailto:evalam@northwestern.edu)

Dept of Learning Sciences, Northwestern University, Evanston, U.S.

## Abstract

Transnational youth use digital media to affiliate with diverse cultural and linguistic practices, as demonstrated through the use of multiple languages and hybrid linguistic codes, media genres and multimodal expressions in the youths' online communication and writing (Black, 2009; Domingo, 2014; Kim, 2016). This study introduces a learning activity, the multimodal writing design *Movable Type*. With *Movable Type*, we investigate how multi-lingual college students use different languages in their composition in the context of 7-week creative writing curriculum, to construct multilingual narratives. The workshop was a constructionist learning activity. We find youth engage with the tool to communicate across multiple audiences.

English

Language Unity, a concept of coming together through language, the expression is difficult. Microsoft Word does not join the letters of the idea because Arabic script is unsupported; Google Docs confines and reduces the font. Of just one phrase, a concept of joining "polylanguages" through this medium of forum discourse, does nothing to belie the "compartmentalized views of" (Orellana, Martínez and Mantaño, 2012 p. 1) لغة. The tools we used to transmettre des idées have, like word processors, and keyboards, structural affordances and limitations. More than just the QWERTY keyboard (Rogoff, 2003) limiting le temps qu'il faut pour pound out a response, structurations, the way things have been built through time resulting from people's interaction and the objects that result, and forms الطريق إلى المعنى. I loved the arguments of how a boy uses different vocabularies in different contexts (Orellana, Martínez and Mantaño, 2012) and that

Figure 1. Visit the online [demo](#) and click on *Language Unity* to see the words turn over.

Imagine every word in this sentence as a wooden block. On the front side of one block is the word *wooden*. The block's other sides are different languages, such as *ağşap*, *de madera*, or *en bois*, in Turkish, Spanish, and French, respectively. The reader can turn the block in the sentence, and see the word "wooden" in more than one language. Each word in the sentence could be organized like this. Thereby the sentence's author could write a dynamic multilingual text. *Movable Type* takes this design idea for multilingual writing and digitizes it to meet the needs of translingual youth on digital platforms to express themselves in more than one register. The approach implies that we can conduct multilingual writing exercises, even in predominately monolingual education environments. The approach contributes to our understanding of constructionism by providing examples of multilingual text construction through open-ended, multilingual construction, tinkering with lexicons, and lowering the floor to transnational youth practices in classrooms.

## Keywords

Translanguaging, Literacy Studies, Creative Writing, Constructionism, Design Study

## Introduction

Constructionism is a pedagogical approach to learning that prioritizes designing the ideal environment for learners to optimize their construction of mental models in interaction with mediating objects, such as learning technologies. Constructionist thinking influences the learning science and educational research, particularly when addressing learning technologies, mathematics, and science education reform. Papert coined the name Constructionism, as a mnemonic (Papert, 1986), to describe a species of constructivist thought. It focuses on the benefits of learning from the external construction of an artifact beside the internal construction of a mental model, or framework. It focuses on scaffolding through clever design of technology (Wilensky, and Papert, 2010), learner freedom (Feriére, 1987), and less regimented time where people can explore ideas (i.e., microworlds, Edwards, 1995). In this intervention, we took the perspective that creative writing is an excellent way to enable multilingual students the ability to construct a mental model of multilingual composition in formal writing settings. We had learners explore multilingual composition of a creative writing project in a constructionist learning environment. *Movable Type* was built to promote this multilingual writing in a constructionist writing course, mixing computer coding and composition.

In this paper, we will introduce a multilingual composition approach, using HTML, JavaScript, and a program called Twine. This project came out of the idea from where the first author grew up: in Nairobi, Kenya and Khartoum Sudan, both in East Africa. When he was growing up, language plurality was the norm, kids would play in German, Swahili, Arabic, Dinka, Nuer, and English and mixing what we said, with polyglot slang. This is polyglot communication, or as a researcher would revoice it as translanguaging (Garcia & Wei, 2014). Moreover, he learned to read late at 11 years old. When writing, it confused him that only one language was used. Most people would speak in more than one language, but when it came to writing they would write in one dominate language which did not make sense. In this paper we introduce a design, and then demonstrate user testing of an approach to change this situation. We introduce a constructionist writing app, *Movable Type*. This desire fits into a need emerging from online youth culture.

Significant research has shown how multilingual youth use digital media to affiliate with diverse cultural and linguistic practices, as demonstrated through the use of multiple languages, hybrid linguistic codes, media genres, and multimodal expressions in youths' online communication and writing (Black, 2009; Domingo, 2014; Kim, 2016). To bring this reality into the classroom, we have designed a constructionist multilingual creative writing environment, *Movable Type*.<sup>1</sup> This design is inspired by multilingual affinity space research (Lam, 2006; Thorne, Black & Sykes 2009; Gee & Hayes, 2011) and recognizes that in online affinity spaces, participation is often multi-modal (Lammers, Curwood, Magnifico, 2012). New synthesizing presentation technologies have made creating, capturing, editing, uploading, and sharing significantly easier, which increases the applicability of multimodal contributions in schools (Curwood & Gibbons, 2009). Furthermore, people do not work in a vacuum, instead, we are surrounded by a socio technical system and embedded in it (Hutchins, 1995). This embedding influences how we do our activities, for instance, when youth post on Facebook or Twitter their posts are influenced by the system they employ to make that post (Curwood, Magnifico and Lammers, 2013). As a result, when a student writes in English only classrooms, they are likewise influenced.

## Design

Our design specifically targets expanding opportunity for multilingual students through such multimodal presentation that emerging technology affords to express themselves with dignity and fluidity across linguistic domains, using multi-voiced (Wertsch, 1991) expression and registers, widening the opportunities for multilingual students to construct and share multilingual texts. We intend that this product can contribute to the democratization of new media access and enjoyment as youth draw from their diverse linguistic repertoire to express themselves and redefine their

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<sup>1</sup> (For the demo see: <http://philome.la/Annonym37753843/movable-type/play>).

relationship to English and other dominant codes in society. This design has the promise to open up new opportunities for constructionist learning in a code first environment, that we hope this pilot can point towards.

## Movable Type

In our design, imagine each word is a wood block. The author can select words or phrases and have them turn over by click. We put different words on different sides of the block, so readers can click to have an alternative word or phrase appear. This allows the writer to author more than one voice, for multiple audiences. This allows dynamic moving of text. For instance, a Mandarin only audience, or a polyglot online fan fiction forum can be authored for more than one audience.

These alternatives, like the original single composition, are author defined. As such, the author can speak to multiple registers within one composition. Like a reader referring to a citation or dictionary, the alternative terms bridge the gap between the author and readers' linguistic registers. This design affords multi-lingual, multi-register composing. Unlike alternatives, the author is in charge of choosing all alternative expression types. Whole sentences, or single terms can be changed, thus avoiding the issue of word order needing to be changed between languages.

Bringing together lean product design and constructionist learning we facilitate the expression of students from diverse language backgrounds. *Movable Type*, is a means to bring multi-lingual composition into educational environments, using off-the-shelf technology that provides creative writing expression without requiring monolingual demonstration.

## Methods

We conducted a two-part study to demonstrate the uses of multilingual writing. We employed iterative design, and qualitative methods. In the first part, we iteratively designed the environment, where users can use inline programming in an HTML environment to author multilingual text.

In the second part, we had six users test the program over a 7-week multilingual creative writing workshop. We collected pre-post interviews, screen captures, class collected video and audio, as well as collected student artifacts. We used these data sources to analyze the intervention to generate case studies of digitally-mediated, multilingual composition to demonstrate our design's affordances and constraints.

## The Curriculum

We organized a 7-part creative writing course for multilingual college students.

*Table 1: The 7 week curriculum for movable type*

<p><b>Session 1:</b> Making Games with Twine  <i>Goal:</i> Introduce participants to the basics of Twine and begin creating. We introduced them to some programming in Twine, and talked about the basics of making a character. Then we spent 20 minutes writing our first Twine Game.</p>
<p><b>Session 2:</b> Multilingual Composition Techniques  <i>Goal:</i> Write First Multilingual Composition using Movable Type.</p>
<p><b>Session 3:</b> Examining Multilingual Texts: <i>Drown</i> by Junto Díaz <i>Goal:</i> Write compelling stories using our new tools, based on <i>Drown</i>, a multi-lingual text.</p>
<p><b>Sessions 4-6:</b> Writing Workshops  <i>Goal:</i> Provide time to write then complete a short story to present</p>
<p><b>Session 7:</b> Creating a public object to share  <i>Goal:</i> Make a public artifact to share.</p>

The purpose of this class was to 1) document and describe a possible curriculum model for a digitally-integrated multilingual composition in a Language Arts environment, and 2) analyze and articulate the learning mechanisms of multilingual composition, with the goal of ultimately

developing a meaningful multilingual authoring curriculum and environment to be used in other learning environments. This second goal will not be discussed in this paper, but will be in future work.

Participants were college students recruited at a large Midwestern university through email and fliers. They ranged in ages from 18 to 26 years old. All participants spoke and wrote multilingually. Participants were six youth, three Asian Americans, who spoke and wrote English and Mandarin. Two of these also had learned to speak and write German. One was of Middle Eastern heritage, and spoke and wrote English and Arabic. Two were Latinx, and spoke and wrote English and Spanish. Five participants were female, one was male.

## Research Questions

This study aimed to investigate how multi-lingual college students use multi-lingual and multi-modal elements in their composition in the context of a creative writing curriculum, and how digital tools affect this sense making process. To increase our knowledge about use of multimodal contributions in formal spaces, like writing in schools (Curwood & Gibbons, 2009), we sought to answer the following questions:

- How do students use multi-lingual elements through *Movable Type* to engage their audience?
- What practices do students employ during their use?  
For instance, do students engage with generative grammar?
- What are the constraints and affordances of *Movable Type*'s design to facilitate multi-lingual creative writing and authoring?

## Findings

In this section we will report the results from three of our participants, Ju, Angela, and Cecilia (pseudonyms). We will focus on our three research questions: how students used the multi-lingual elements through *Movable Type*, how students engage and used globalized social practices in a creative writing environment, and what constraints and affordances of the *Movable Type*'s design facilitate multi-lingual creative writing.

### Multi-Lingual Authoring for Multiple Audiences

To answer research question 1 and 2, how users engage in *Movable Type* and with what practices they employ, we used an interview protocol. In this section we will discuss results from one user, Ju. Her family was originally from Mexico, but she grew up in the Midwestern United States, and entered as a first year at a local University. Using *Movable Type*, Ju crafted two narratives that used translanguaging (Garcia & Wei, 2014) to various extent, where she drafted texts in more than one language. When we asked her why she normally chose to speak monolingually among friends she argued the addressivity of her language:

Interviewer: Why do you mostly choose to speak in one language?

Ju: I think it's because of the audience. So like if I were to speak in both, people would constantly be asking me what it means.

Interviewer: And that would make you?...

Ju: Then I would have to teach them. [Laugh] That sounds very very lazy but like when I do [speak in more than one language], and people make fun of me. The [words] I am using [multilingually] already have like an expressive quality to it. Like I could say *Ay, por Dios* [0:48] and no one has to know exactly what it means because they are gonna guess that I am frustrated. I roll my eyes. I wave my hand like that [raising and flipping her hand]. Also, I was always taught not to say "Oh My God", because I'm not suppose to take the lord's name in vain, but for some reason, I don't think the same way about *Ay, por Dios*. I was never taught that.

The same phrase literally translated had different meanings between the two languages. She has a rule when she says the phrase *oh my God*, that does not apply when she says *ay, por Dios* even though they literally mean the same thing. When I asked her if the word *dios* is the same as the word *god*, she said: “They are not. While the literal translation is the same, the way that it’s said is different. I’ve never heard someone say *ay, por Dios* because they are excited. It’s always like, are you kidding me?!” The same idea has different meanings in different languages, and being able to use the right one in a text has potential benefits. Using both meanings allows Ju to author the version she means to portray. Ju found that teaching others, unless she was using the expressive quality of an interjection, did not work in everyday dialogue. So she chose who to speak to multilingually based her impression of the audience’s language competence.

She argued this multi-linguaging allowed her to “communicate with more people.” When she volunteers at wellness centres, and soup kitchens, she can actually talk to the people at the shelters. “Whereas other people can’t.” Languages allow for human connection with the globalized needs caused by immigration to a Midwestern town. Additionally, within her own family, her younger cousins never got close to her grandfather, because they did not know Spanish. Language, both monolingual and polylingual, brings people together.

### Translanguaging

She found that *Movable Type* encouraged her to translanguage. She found that writing in multiple languages was like “having many friends.” Because she had more words to lean on when she needed to.

Ju: When you are multilingual you have so many more opportunities. Like for friendships, or for new ideas, or to connect with other cultures. There is so much, because languages are not just words. There are reason why certain words exist. The things that are said in Spanish are adaptable. So having many friends, you have more resources. A different quality of experiences. Or like, every word is based upon their history. Being multilingual you have a back way into all of these languages.

Bringing all of her friends into the formal discourse of creative writing seemed to embolden her. While, bringing translanguaging into the formal context of creative writing at first was difficult for her, on practicing it week after week she grew to interject multilingual thoughts into writing which she usually would perform monolingually. She wrote multilingually in a variety of contexts:

Ju: In a context where it incorporates all of the languages. Or if I am writing a letter, but really I mean a message, to someone who speaks both languages, or if I am talking to someone in one language and I am like I don’t know exactly how to say a certain word, I will just say the other and hope for the best.

She also said that during her writing in *Movable Type*, when she wrote about her grandmother, she wrote multilingually, “Because a lot of my experiences with her have been in Spanish, so like Spanish thoughts just appear.” She argues that *Movable Type* affords her view of interweaving language:

Ju: Because you can like fix your audience. I wouldn’t have to worry about using certain expressions that come to my mind. Like, you know how I say *ay por Dios*, those things [interjections] are expressive on their own. But depending who is in my audience, I will choose certain words because I am not going to say something someone doesn’t understand. But with the clicking [through words] function in *Movable Type* I can say something I’d usually say in another language because it makes more sense to the audience. [*Movable Type*] is helpful because I can express myself in whatever way I think is best, and my audience will always get the message.

This practice brought together her interest in globalized identities, bonding with her family, and communicating to multiple audiences the way she imagined they wanted to be talked to while filling a personal desire to bring out the flair, that she would use in speech, in her writing.

## Generative Grammar

Ju found that *Movable Type* poses some problems to grammar. For example, in English you say *to walk, to eat*, but in Spanish, you do not put a preposition before the infinitive. So when she used the infinitive she kept the preposition *to* in English, and then used the Spanish verb, forming: *to caminar*. She kept the *to* because: "In my mind, it's the infinitive version and meant *to do that*. I didn't translate it as *to to walk*, but instead, *to the 'movement of walking*. In this process, Ju generated grammar in time, as she needed it. Generative grammar did not stress her out. She constructed it as she went. Ju found that the *Movable Type* design afforded her the ability to integrate her multilingual speech into her creative writing without leaving out audiences who do not themselves speak multilingually.

## Coding While Writing is Powerful, but Confounding

Ju found the use of the code snippet in the HTML at times overwhelming. She said:

Ju: I found the coding cool, cause I don't do that. If coding was part of the intention of it, if you wanted them to learn about coding, then keep it, because it makes total sense and expand on that portion of it. But because it would become so bulky and stuff [in the writing HTML] if its more so just for the language component, then put the coding behind the scenes. Just type this word and highlight it, and it will go to another word.

She felt the design should focus more on either the coding, or the writing. She argued she did not really code, and switching back and forth was distracting her from writing. This constraint of coding while writing made her feel less creative than she would have.

These constraints and affordances of *Movable Type*'s design facilitated multi-lingual creative writing, but they exposed that the coding aspect detracted from her flow of creativity. As we continue to iterate the design we will decide if the coding is part of the design and integrate it more fully, or if writing is the focus. If writing, we will need to provide a graphical user interface (GUI) to go over the multilingual writing. In Ju's words, "Do one or the other."

In the process users generate grammar to meet their new expressions like they would in a text message to a multilingual addressee. They mix and match words and because they can explain unknown words through *Movable Type*, they can express themselves more fluidly. This gave Ju a sense that she had more resources to express herself because she had many friends. Thus Ju, and in our observation the rest of the students, use multi-lingual elements through *Movable Type* to engage their words to talk to their audience so that they understand.

Ju employed translanguaging, and was comfortable with the multiple sources of language. The ability to mix and match in formal writing, like she already does in speech, supported her effort to construct multilingual texts through code and creative writing.

## Satisfaction of Multilingual Communication

Angela was originally from the US, but spoke and wrote Mandarin, English, and German. She saw the communication of language as being like having multiple selves and the process of multilingualism deeply satisfying:

Interviewer: What is satisfying about communication in more than one language?

Angela: For me part of it is technical. Like I love it's something I can learn quickly, and apply that knowledge, to interactions. When you learn math, I guess it is exciting but, it's like 'YAY' now I can interact with this test. Maybe that's just me. But language, when you learn language it means you can interact with another person. It means you can be less dependent when you are in a place of that context. It's a bridge to another culture. The famous example with the Germans is *Schuld*, which means both debt and guilt. And it's true. Germans don't like debt.

The process of communicating in more than one language excited Angela. Because it allowed her to understand the underlying meanings and connection hidden within the words. It also excited

her because language lets her connect to others. She found multilingualism was like having more than one self:

Interviewer: Finnish this sentence, Being Multilingual is like...

Angela: It's actually like have multiple personalities. It does kind of change the brain a little bit from language to language. My voice changes when I speak German. Maybe it's the movies influencing me. It is kind of like having multiple selves. It is not even just the language, but when you go to another country, it's easier to integrate into that life style if you can speak and act the language as well.

Like Ju found that having more words was like having more friends, Angela found having more languages is like having more selves. With these selves, she found even humor changes. In German, she authors a more sarcastic self. She complains more. She was not sure how she could justify what she said.

She felt the process of coding words which can change on click, *Movable Type*, is a more realistic expression of multilingualism than a monolingual classroom. She especially thought when we brought *Drown*, a multilingual story by Junot Díaz (1997), into class it helped to put the design, *Movable Type*, into some context. It helped her realize that multilingual communication, "is something we do all the time. This is what a lot of Americans have experienced in their lives, and it's like, I like the idea of Movable Type... I wish it was easier to code." She felt the idea behind *Movable Type* reflects something real about language; something about how we use it. She equated it to the communicative method of language learning, where it does not matter if you learn the grammar or the language perfectly. What matters is that you are supposed to be able to communicate. But sometimes, that means you switch into other languages to communicate.

She felt *Movable Type* is a better reflection of the notion of what communication looks like. Even when we all speak the same language we are not all speaking the same language.

Angela: When you think about jargon and things like that, if a friend of mine came into some of my classes, they probably wouldn't understand half the things that were going on. And that sort of mix thing happens in every conversation.

She felt the process happens, even within the same language, much less without. She argued that the idea that anyone can ever be completely monolingual is not true.

### Constraints and Affordances of Movable Type's Design in Multi-Lingual Creative Writing

The constraints of the design existed around its ease of use, and on the cognitive load (Sweller, 2011) that system entailed. Cecilia wrote a story, *Wizard of the Sea*. In it, she mixed German and English. Cecilia copies the

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<body >
  <span> <button{
    display:inline;}
class='pushme'>اللغات المتحدة</button><script>
  $(function(){
    $(".pushme").click(function () {
      $(this).text(function(i, text){
        return text === "Language Unity" ? "اللغات المتحدة" :
"Language Unity" ;
      })
    });
  })
</script></span><span>, a concept of coming together through
language, the expression is difficult. Microsoft Word does not

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Figure 4: Multilingual composition that can be changed by user interaction with text.

source code for a multilingual phrase into the editor to begin the process of writing a multilingual component. As shown in Figure 4, the code chunk is long. This rests inside of the writing environment. We employed this method to 'white box' the code, allowing full remixing of the code

by the user. This afforded Cecilia the opportunity to appropriate the material to her own needs. Once the chunk is pasted in, Cecilia rewrote the parts of the code to change the representation on click. Defining first what the chunk will say to start, and then what it will say on click.

The interface afforded remixability and a dynamic authoring environment. The technical nature of that adaptability, however, means the writing process becomes a technical endeavor. Some users found this inhibited their creativity. In future iterations we plan to focus more on the design of the experience to either target the coding segment, or facilitate the creative writing by providing a GUI for authors. Walking the line between these users' needs seems like a reality in delivering a tool into the underserved need of multilingual authors.

## Conclusion

Participants in a 7-week creative writing workshop used *Movable Type*, an open source multilingual writing technology, to author multilingual stories. During the process they engaged in translingual construction of texts with multiple audiences in mind. This provided a way for all of the different linguistic resources translingual youth have to find a place in their writing. Unlike the monolingual environments that formal writing often engenders, *Movable Type* opened up space for these multiple voices within the constructionist learning environment. This affordance addresses one of the social challenges of multilingual authoring in monolingual majority classrooms. The technical system, however, posed some challenges. The major one was the cognitive load (Sweller, 2011) of both authoring text while editing code. In this pilot study, we included coding to meet the needs identified in the design phase, but due to the high load and potential to push out certain voices who are the target users, we believe developing a GUI only version along with a code exposed version will meet the divergent needs of our intended design more fully. We intend to develop this in the next iteration. Further, it was difficult to be creative and technical at the same time. In future iterations we will build on these early promising results for multilingual authoring to address the challenge of constructing multilingual narratives in formal writing environments.

Multi-modal, multilingual expressions are meaningful for today's youth, not just youth who have experienced migration (Kim, 2016). As a result, we have designed an authoring environment that educators can use in their classroom today, using free software to aid students in creating and expressing. This design, we hope brings the globalized social practices of today's youth into the educational environment, so that education practices can better keep up with youths' innovations.

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