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Portraits of Underprivileged Filipino Second Language Learners: Towards the Development of Computer-based Educational Game

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Abstract: This study determined the portraits of underprivileged language learners in attempt to design educational software for them. Toward this goal, we conducted an ethnographic study which involved surveys and interviews of the informants (i.e., teachers). Textual analysis on the responses of the informants revealed that underprivileged language learners can be classified into four types. Implications to computer-based educational game design are also offered.

Keywords: language learning, types of language learners, underprivileged students

1. Introduction

Children are given voice in educational game design considerations to ensure inclusive digital materials. Their inclusion in the participatory design of educational software ensures that their learning needs and age-appropriate design requirements are met and addressed (Druin, 2002). However, students' access to digital educational resources remains a persistent challenge because inequality of access to Information Communication Technologies (ICT) of learners in developing countries. This problem has been observed in global (Jesus, Oleveira, & Bacao, 2018) and in local settings (Alampay, 2006). While there are studies (Kim et al., 2012; Folotiya et al., 2014) that attempted to address this gap, very little is known how socio-economic status, ability levels, and ICT access (computers, laptops, tablets, cell phones, and the Internet) influence the design of educational game of students from the underprivileged background. The homogeneous perspective on the characteristics of the beneficiaries of the educational game may not specifically cater the educational concerns of every type of students.

We conducted an ethnographic study in attempt to address this research gap. In this paper, we aim to determine the different portraits of students in order to understand their educational needs. The results of the study may serve as inputs for the development of a computer-based English language learning system tentatively called JOLLY. JOLLY is intended to teach English-language phonemic awareness to disadvantaged students for whom English is a second language, using popular songs.

This paper analyzed students survey results and interview responses of English teachers (subsequently referred as informants) in order to determine the portraits of the economically disadvantaged students. A more inclusive understanding of English language learners in the light of their economic background, English competencies, attitudes towards English, and ICT access will be considered in the design of a computer-based game. Toward this goal, this study aims to (1) determine the types of language learners based on their socio-economic status, ability level,

attitudes towards English language learning, and level of access to ICT, and (2) determine the implications of the types of language learners to software development.

2. Literature Review

There are studies that discussed portraits of language learners. For example, the study of Khatib and Rezaei (2013) explored the identity of an Iranian English language learner. The authors provided a single image of an Iranian learner named *Reza*. The image of the learner was depicted in terms of his Persian identity, cultural norms, values, and pronunciation in relation to his learning of the English language. *Reza* was characterized as a 26-year-old boy from a highly educated family. He held a bachelors degree in Petroleum Engineering. He studied English for at least 16 years, which explains his English proficiency. His business trips motivated him to further strengthen his English skills.

In a similar recent study, Amirullah, Andrew and Eckersley (2015) described the portraits of Indonesian learners to learn their native language as well as the English language. The context of language learning was viewed in terms of motivation and "future selves". They described *Kadir*, third-year Mathematics student in a bilingual program, as a student who envisioned himself contributing to the national development through English language learning. Another student, named *Gary*, perceived that English is necessary in order for him to work in one of the countries in the ASEAN region (Association of South East Asian Nations). *Azizah* had the same perception with Gary as the former intended to be part of an international agency. The authors concluded that the participants of their study aspired to become bilingual because they desired to belong to local and global communities.

3. Methods

3.1 Ethnographic Approach, Setting, Participants, Sample, and Data Collection

Ethnographic approach is the appropriate method of this study since it determines the categories of language learners in a disadvantaged setting. Informants of this study were teachers of two public schools in Quezon City in the Philippines. Both schools were selected because of its geographic proximity to the Ateneo and they were recommended by the Ateneo Center for Educational Development (ACED). ACED is an office at Ateneo de Manila University that is mandated to support state schools in improving teaching and learning (e.g., teacher training, materials production, and student nutrition programs). The two schools had comparable student populations (7,419 students in School A, 6,377 in School B).

Both School A and B had approximately 50 students per class. Students had access to textbooks but lack other print reference materials like newspapers, magazines, and dictionaries. They do not have computer in the classroom and Internet connection. The informants bring their own laptops and projectors in their class.

Twelve 4^{th}-6^{th} grade English teachers were invited to participate in the interview sessions: two per grade level for each of the two schools. Invitations were also balanced by the ability level of the class sections to which these teachers were assigned. The informants were all female teachers with at least 5 years teaching experience, and had advanced English-related degree programs.

Formal, face-to-face, semi-structured interviews were conducted with the informants. They responded to 11-item close-ended questions. The interviewees followed an interviewee protocol to ensure data consistency. The questions were all about the students including their English proficiency and usage, socio-economic status, and access to technology. The interview lasted for an hour. Note-taking and audio-recording were employed to gather the responses of the informants.

Survey forms were equally distributed to low, average, and high performing sections. The questionnaire contains items pertaining to the students' attitudes towards English and access to ICT. Seven hundred ten students participated in the survey. The ages of the students ranged from 8 to 18 years old and averaged 10.6 years old.

3.2 Data Analysis

The responses of the informants were typed in a word processor. Texts were analyzed through thick description in order to determine the types of students in this study (Mertens, 2015). The first author analyzed the texts line by line using the initial coding process proposed by Bringula et al. (2018). However, instead of using open codes, *a priori* codes were used on which were based on the barriers to learning framework of Chisholm (1996). According to the Chisholm, there are four factors that contribute to the failure (or success) of learning, namely, 1) infrastructure, facilities, and resources of the school, 2) leadership, management, and administration of the school, 3) the relationships among its stakeholders (principals, teachers, students, and parents), and 4) socio-economic context.

Guided by this framework, words or phrases were highlighted that signal the socio-economic status (e.g., poor, financial problems, etc.), ability levels (e.g., struggling, low-performing, high-performing, competent, etc.), interests towards English (i.e., no interest, hesitant, etc.), and the level of ICT access of the students. To illustrate, the interview transcripts said that "*Many of them get up early in the morning to sell pan de sal or balut in order to make money for their families. One 11-year old child was employed as a storekeeper at a bakery. He had to watch the store from 2 pm to 11 pm. Hence, he was always sleeping in class."* signal that the student is from a low income family (*make money*, *employed as a storekeeper*) and low performing (*always sleeps in class*). This process is repeated until all texts are analyzed. The texts that reflect the type of students are grouped together and given fictitious students' name. These names and its characteristics depict the portraits of the English language learners from a disadvantaged background. Students' attitudes towards English and ICT access were tabulated. The results were presented in percentage.

3.3 Validity and Limitations

The different types of students were presented to the informants. They all agreed that these types of students existed in their schools. Nevertheless, this paper has inherent limitations. The two schools in this study are situated in a city which may have different settings and conditions to those of rural schools. Consequently, underprivileged students from the rural areas may experience different conditions and environment from the students in this study. Another limitation of the study is that it only considered the students-parents relationships (i.e., parental support). Therefore, it is suggested that readers and researchers apply cautiously the findings of the study to settings with the same environment and conditions.

4. Results

4.1 Socio-Economic Status and Ability Levels

Ethnographic interviews with the informants revealed that the students in the study generally belongs to the lower income families (monthly family income of at most Php15,780 or approximately US$303) (Albert, Gaspar, & Raymundo, 2015), whose parents are working as construction workers, drivers, sales ladies, security guards, carpenters, and the like. Their parents are unlikely to have finished college. There are cases that there are students helped their parents to earn income for the family. It was disclosed that there were students sell *pan de sal*, *balut*, *sampaguitas*, or other items on the street. One 11-year old child was employed as a store keeper at a bakery. He had to watch the store from 2 p.m. to 11 p.m. These students, according to the informants, usually struggle in class, not because of cognitive abilities, but because of lack of focus. They usually sleep during class discussions because of exhaustion. Informants further revealed that students that struggle financially are usually found in the lower sections.

On one hand, there are students that belong to the middle-income class as their parents works as professional overseas workers (Overseas Filipino Workers or OFW). Their parents have university degrees and hold managerial positions. The relatively higher income of their OFW parents afforded them to have ICT access. According to the informants, parental support is highly visible for these types of students and it has positive impact on students' academic performance.

This finding supports the study of Boonk et al. (2018). Parental support creates a home environment that is conducive to students' learning. Students from this income group are more likely to be found in the higher class sections. These students have higher proficiency levels in English as well as in other subjects.

Parental support is not only found in the middle-income group. For instance, *Carl* is a class valedictorian. He is from a poor family and yet he is a model student. He wears well-pressed and clean clothes, recites in class, and excels on his subjects. Despite the hardship, *Carlo's* parents are supportive on him; probably believing that education is the best remedy to their poverty.

4.2 Attitudes towards English

Table 1 shows the students' attitudes towards English. Students enjoy learning English (87%) and reading materials in English (78%). They find English easy to learn (50%). They perceive that it is important (90%) that is why they have the desire to learn it (79%). However, English learning is impeded by their nervousness when speaking the language (42%), not by practicing it at home (40%), or by not using it as a conversational language with their friends (51%). The informants corroborated this find saying that their students do not use English outside the classroom.

Table 1.
Students' Attitudes towards English

Attitudes towards English	Strongly Disagree / Disagree	Strongly Agree / Agree
I speak English at home.	40%	35%
I speak English with my friends.	51%	24%
I enjoy learning English.	4%	87%
I enjoy reading in English.	7%	78%
I find English difficult to learn.	50%	19%
I feel nervous when I need to speak English in class.	33%	42%
I want to learn to speak and read in English.	9%	79%
Learning English is important.	4%	90%

4.3 Access to ICT

The majority of the students reported to have access to the Internet at home (70%), cellular phones (63%), computers (54%), and tablets (36%). Personal device ownership is relatively low (40%). Other students reported that 45% of the devices they are using are owned by a family member. More than 25% of the students make use of rented devices. It was also reported that other students use cyber cafés to access the Internet, which charge Php1.00 (approximately US$0.02) for three minutes of computer use. Educational-related activities are the primary purpose of the students of visiting cyber cafés. Furthermore, the purposes of using Internet in cyber cafés include visiting social media websites (54%), playing online games (50%), surfing the web (29%), and sending email (18%). This is consistent to the findings of Bringula et al. (2013).

4.4 Portraits of Underprivileged Learners

Based on the findings above, we present four portraits of students that personify the types of learners from an underprivileged background (Table 2). The first student is named *Tala* – a high-performing student who enjoys school and likes English. She is competitive and diligent. Strictly speaking, *Tala* does not belong to an underprivileged family. Nonetheless, she is not rich. She is from a middle-income class family. Her parents are supportive—they check whether she has done her homework and take time to consult with the teacher. She has access to ICT and personally own devices. *Tala* is more likely to be in the higher class sections.

Table 2.
Types of English Language Learners from an Underprivileged Background

Leaners	Socio-economic Status	Ability Level	Attitudes towards English	ICT Access
Tala	Middle income	High performing	Positive	High access
Danisay	Middle income	Average performing	Negative	High access
Jerome	Low income	Low performing	Negative	Low access
Carl	Low income	High performing	Positive	Low access

The second student is *Danisay.* She represents average students, enjoys schools, appreciates the importance of English, and has a supportive home environment. She is similar to *Tala* in terms of economic background. She has also access to ICT, and owns personal devices. She belongs to the middle-class section. However, she is quite hesitant to use the English language.

The third type of students is the low-performing students. He has limited access to ICTs and does not own devices or even his family members. Instead of dedicating his time to study, this type of students helps their family to earn a living, which leaves them very little time to study. This student strives to balance his studies and work. Hence, the poor class performance may not be attributed to their cognitive abilities but because of lack of focus and support (financial and motivational) from their family members. Brought by his inabilities to cope with his studies, he is uncomfortable using the English language. Because of their low academic performance, they are usually assigned to lower class sections. We called him *Jerome*.

Carl is the last type of student. As mentioned in the previous section, he excels in class like *Tala*. They share common characteristics in terms of academic excellence, English language proficiency, and parental support. The only difference between *Carl* and *Tala* is that the former and his family struggle financially. As such, he has limited access to ICTs. He augments this by availing himself the services of cyber cafés in his neighbourhood. All types of students are technology-literate. Taken all together, they comprise the kinds of English language learners in an economically-deprived environment.

5. The Portraits and its Implications to Computer-based Game Design

As mentioned in the Introduction, the goal of the study was to identify learner characteristics that might influence the design of the software. The results of informant interviews and survey responses of the students suggest that their economic backgrounds, ability levels, attitudes towards English, and level of ICT access of students from the disadvantaged background varied. Students like *Tala* have no barrier in accessing computer-based games. The game design consideration for these types of students could focus on the levels of difficulty of the game and the content of the game itself. Since her cognitive abilities in English may be advanced as compared to her contemporaries, the game may have a certain levels of difficulty appropriate to their competency. They may also use the game as an additional learning material to practice their English competency. The *Carl*-type of learners will also benefit in this design consideration.

Game level difficulty can also address the educational needs of *Danisay* and *Jerome*. Game developers must ensure that the content of the game target the desired competency levels of both *Danisay* and *Jerome*. As for the former, the game should address her shyness or hesitation to practice the English language. The game may provide encouraging textual feedback to eliminate her hesitations.

The game design considerations for *Jerome* are more challenging. Skipping classes and poor class participations endanger Jerome of failing his subjects. The game may serve as an educational resource for *Jerome* to catch-up with his English lessons. The school may institutionalize a remedial program using the game as a tutoring material. Game developers may consider developing standalone and online versions of the game. The standalone version may be helpful in the absence of Internet connection. On one hand, the online version may be accessed through cyber cafés. Public access of ICT for a fee is relatively inexpensive in the Philippines. Hence, *Jerome* and *Carl* will both benefit in the online version of the proposed game.

The results of the attitudinal survey provide further perspectives towards game design considerations. In one side of the scale, students have positive attitudes towards English. On the other side of the scale, there are students that are unenthusiastic towards English learning. Game

developers are informed by these findings in two ways. First, the game must sustain the positive attitudes and meet the learning expectations of the learners. Second, game developers have to design the game that could change the attitudes of the unenthusiastic students.

While the studies presented in the literature section are similar to this study in terms of concept, the contexts in which language learning is investigated are different. Additionally, we extend the previous studies by providing multiple personalities which offer broader understandings of English language learners. Accordingly, *Reza*, the portraits depicted in the study of Amirullah and his colleagues, and the four types of learners here in this study are incomparable.

6. Conclusions and Future Works

This study provided the types of disadvantaged Filipino youth who are learning the English language with the purpose of developing an inclusive game. Even though that the students were drawn in the same socio-economic background, we found that there were dissimilarities in terms of their personas. We found that that there were categories of learners based on their socio-economic background, learning abilities, attitudes towards English, and ICT access. Thus, it can be concluded that the participants of this study are heterogeneous and that their digital educational needs vary from one another.

Based on these types of English language learners, we identified a single game with different levels and features that are suitable for each kind of student group. The game considerations include the platform of the game (i.e., standalone or online version), the competency levels of the students, feedback mechanisms, and content of the game. Generally, content and accessibility of the game are the primary game design considerations for the types of learners in this study.

Given these findings, it is recommended that game developers consider these variations among the students and design considerations in game development. Testing, user acceptance, and usability studies may then be initiated after the game has been developed. Lastly, it is suggested that the study be replicated in the rural areas in order to achieve wider digital inclusiveness.

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