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Crossover literacies: A study of seventh graders' multimodal representations in texts about *Pokémon Go*

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Abstract

In this article, an analysis of multimodal representations in elementary school students' descriptive texts about the mobile game *Pokémon Go* (PG) is used to discuss youths' new literacy practices emerging from their out-of-school experiences (e.g., gaming, producing game-walkthroughs, and fan art). Social semiotic multimodal analyses of two students' PG texts and their participation in talks around their texts are used to exemplify what occurs semiotically in the translation of meanings and designs across modes, media, and sites. Combining the analysis of the meaning potentials of multimodal representations with ethnographic accounts of their use in context produces the following findings: The PG writing task connects with the students' life-worlds and the gaming context around PG prompts the design of their multimodal representations. The students are active creators of content and demonstrate purposeful and innovative uses of semiotic resources in self-representation, stance taking, and audience awareness. The iPad facilitates multimodal and digital crossovers between leisure activities and school subjects. The concluding discussion suggests how game-based literacy practices could be transferred into academic settings.

Keywords: writing; multimodality; affinity spaces; game-based literacy practices; iPads

1. Introduction

When representing knowledge, students interpret, select, transform, and combine the different modes and semiotic resources available to them, based on the social context and the specific aims they strive to achieve (Kress, 2010). Both in and out of school, students create digital content focusing on specific interests, such as gaming, music, and fan art, and many students participate in the so-called *affinity spaces*, where they interact in terms of common endeavors and shared passions (Gee, 2004). These social networks rely on writing as the primary mode of communication (Barton & Papen, 2010), although (as my study shows) this kind of writing is situated in multimodal meaning-making. In this paper, I present findings that can lead to a better understanding of multimodal literacy practices in tablet-mediated environments and discuss the ways in which students can benefit from gaming literacies that make use of overlapping digital and multimodal practices.

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In Norway, the concepts of literacy, multimodality, and digital competence are embedded in a nationwide curriculum and student literacy achievement is crucial throughout the elementary Grades 1-7 and in higher education (Grades 8-13). From a European perspective, Nordic countries are frontrunners in the deployment of high-speed Internet in schools, and Norway is also one of the top five countries in terms of student access to computers and tablets (European Commission, 2019). Despite regional differences, elementary schools increasingly adopt tablet technology.

My study was conducted in an elementary school that implemented a 1:1 iPad program in 2012/2013. Students in Grades 5-7 always have their personal iPad available, even at home, using it for homework, gaming, communicating on social media, and so on. The participants are 12-year-old students who are confident in their ability to use the iPad as a tool for both educational and recreational purposes. In this paper, I explore what characterizes the students' digital-semiotic practices in composing texts about the mobile game *Pokémon Go* (PG). I have applied social semiotic multimodal analysis (SSMA) of the multimodal representations emerging in the text composition phase, in the finished texts, and in the students' talks around their texts. This means that I have paid attention to the students' selections and arrangements of semiotic resources, encompassing their reuse of existing or digitally adapted resources, as well as to their representational choices. My analysis has been guided by this research question: How does the students' work in and around *Pokémon Go* influence their multimodal designs and roles as writers?

The students' talks around texts illustrate that when faced with the PG assignment, they turn to their familiarity with this game and its paratexts to help them make sense of the assignment's linguistic and visual demands. This results in innovative and evolving multimodal representations, such as collages, fan art and logos, drawing on designs and skills that are specific to gamers' maker culture (Gee & Hayes, 2012). The analysis here concentrates on two focal students' multimodal representations and three selected literacy events: the design of the PG heading, the creation of PG fan art, and the written PG text.

2. Previous research

The iPad is said to have a multimodal intuitive logic that could facilitate students' learning, extending the range of resources for communication and representation and allowing combinations of verbal, visual, and aural modes (Gallagher et al., 2015). International review studies on tablets have shown the lack of longitudinal studies monitoring students' writing practices with tablets (Haßler, Major, & Hennessy, 2016; Zhang & Nouri, 2018). Furthermore, research into the modal complexity offered by tablets that considers the learning context remains scarce (Simpson & Walsh, 2017). In Norway, researchers have identified the lack of research-based knowledge about the learning outcomes of educational technology using tablets (Krumsvik, Berrum, & Jones, 2018). In short, students' multimodal literacy practices with iPads still constitute an emerging area of educational research.

2.1. Crossover literacies: multimodal composition and gaming literacy

In this literature review, I present the connections between out-of-school and in-school multimodal composition focusing on game-based literacy. Literacy scholars Pamela Takayoshi and Cynthia L. Selfe (2007) have stated that the definition of multimodal composition needs to reflect students' literacy practices in new digital communication environments. Using computer games and gaming paratexts in multimodal composition, instructors can build bridges across students' interest-driven literacy practices and help them develop scholarly purposes of writing (Arduini, 2016, 2018; Daniel-Wariya, 2016; DeLuca, 2018; Fry, 2012; Gee, 2007; Jewitt, 2008; Sabatino, 2014). According to literacy researcher Tina Arduini (2016, p. 10), *gaming literacy* refers to "the literate practices of gamers and their abilities to effectively play video games and utilize gaming-related paratexts." Even the simple act of gaming requires fluency in image interpretation, text consumption, and audio awareness, and Arduini (2018) has argued that engaging with paratexts (e.g., game-related websites, walkthroughs, Internet forums, etc.) creates spaces for gamers to develop important multimodal composition skills. Katherine DeLuca's research on affinity spaces and fandoms has suggested that integrating elements from these online communities into the composition classroom can enable instructors "to build a pedagogy that begins where the students already are through the distribution, circulation, and discussion of multimodal compositions" (2018, p. 76). Examining the relations between computer games and writing, Joshua Daniel-Wariya (2016) has highlighted the element of play in gaming, as well as play as a meaning-making resource. In her dissertation on game walkthroughs as instructional texts, Megan Fry (2012) has posited that walkthroughs could be paths to professional writing. This relates to Lindsay Sabatino's (2014) work on Facebook gaming, where she

has demonstrated how the public nature of writing in game-based communities creates opportunities for developing audience awareness. An overview article of 93 Nordic studies on students' out-of-school literacy practices identifies that most of the studies examine whether these practices cross over to classroom practice (Juuhl & Michelsen, 2020). Research on crossover literacies has shown that students search for, and reuse, semiotic resources in re-mixing processes within educational settings (Erstad, Gilje, & de Lange, 2007; Strømman, 2020). A recent Finnish study of students' gaming literacy identifies creating and sharing as important metagame activities (Kahila et al., 2020), findings relevant for my own research.

While new media scholars have identified important transferrable skills that students' everyday digital literacies can provide, several scholars have also pointed to a pedagogical digital disconnect between home and school literacy practices (DePalma & Alexander, 2015; Walsh, 2010; Williams, 2014; Wohlwend, 2017). This disconnect can be thought of as a site of contestation where unequal discourses on literacy intersect and influence how literacy is taught, who gains access, and what counts as literacy (Wohlwend, 2017). Researchers have identified gaps in students' rhetorical comprehension of the various new media in which they engage and gaps between multimodal and print-based composing tasks regarding the students' notions of the audience and the processes of inventing meaning (DePalma & Alexander, 2015). Some instructors also face a gap between the conventional teaching of composition and modern text cultures. When instructors seek to include digital games and other elements of popular culture in their teaching, this can entail engaging in practices with which they have little affinity or expertise (Walsh, 2010; Williams, 2014).

2.2. Researching Pokémon Go

Released in 2016, PG is an augmented reality game where the Pokémon figures appear on a map in real time. Players collect Pokémons and progress through the game's levels by throwing Pokéballs toward the characters as they encounter them. The characters can be attracted through items collected during the game, and Pokémons can battle in gyms – destinations where opposing teams face each other (Niantic, 2016). As PG serves as an accessible text for class purposes, it has been used and discussed by both practitioners and literacy scholars (Blevins, 2018). Research on PG includes studying the game in relation to affinity spaces (Tran, 2018), navigating augmented reality (Blevins, 2018; Wohlwend, 2017), the characteristics of the Pokémon fandom (Assunção, Brown & Workman, 2017), and concepts of multimodality (Howell, 2017). According to Emily Howell (2017), PG is an example of how a multimodal digital text has its own affordances (e.g., by employing images and mapping) and how it connects with gaming tutorials employing multiple modes (e.g., text, font, color, hyperlinks, still images and videos), requiring students to understand information in various modes. Much of the teaching on how to play PG is offloaded from the game and distributed across sites and resources provided by other players (Tran, 2018). These sites and resources include walkthroughs, wikis, glossaries, and fan art shared on social networks, and the literacy practices in the PG affinity space have a multimodal nature.

3. Theoretical perspectives

Several, sometimes overlapping, theoretical frameworks and concepts relate to interest-based, technologically mediated learning, especially among youths. Here, I draw on theories from two interconnected fields: 1) New Literacy Studies (NLS), which explore issues of identity and agency in relation to literacy practices across various contexts, such as in-school and out-of-school (Barton, 2007; Barton & Lee, 2013; Gee 2004, 2007; Gee & Hayes, 2012; Maybin, 2007), and 2) multimodal theory, which is oriented toward the observation and the analysis of semiotic production in digitally mediated multimodal texts (Kress, 2010; Kress & van Leeuwen, 2006; Jewitt, 2008, 2017). The third theory that I use concerns Lev Manovich's (2013) views on new media and the culture of remixability.

3.1. Literacy events and affinity spaces

Scholars within NLS regard literacy as a set of social practices that are observable in events mediated by written texts. In NLS, the notion of a *literacy event* becomes the empirical phenomenon, providing a starting point for analysis, while *literacy practices* are more theoretical, providing patterns abstracted from events (Barton & Papen, 2010). According to ethnographer Shirley Brice Heath, a literacy event is "any occasion in which a piece of writing is integral to the nature of the participants' interactions and their interpretative processes and strategies" (1983, p. 74). To reflect more contemporary notions of literacy, NLS scholar David Barton (2007) has elaborated on the idea of a

literacy event, suggesting that relations between events may be serial and chained, embedded, or subordinated. When researching stance taking in public online spaces, David Barton and Carmen Lee (2013) have found that people move seamlessly in and out of different literacy events and domains. As pointed out by Barton (2007, p. 177), this movement is also the case in schools: "(. . .) schooled literacy is not the only form of literacy going on in schools. These are other literacies which are rendered invisible." This aligns with Janet Maybin's (2007) argument that the home/school binary embedded in the NLS theoretical framework has been associated with an abstract conception of schooled literacy that does not consider students' actual everyday experiences in classrooms. In her ethnographic classroom research, Maybin has uncovered a range of unofficial literacy events among the students, referred to as "under the desk literacies" (2007, p. 517). Although these literacy events appeared to be off task activities that strayed from institutional norms, they involved a range of different kinds of engagement with texts that could help build literacy (Maybin, 2007).

A similar spirit that is open to everyday literacy practices is evident in James Paul Gee's (2004) research on video games and affinity spaces. The affinity space theory is anchored on Gee's observations on how individuals interact in online games, forums and websites. As players join digital games, they interact with "a multimodal literacy par excellence" (Gee, 2007, p. 18), and these games can comprise "a fruitful precursor domain for mastering other semiotic domains tied to computers and related technologies" (p. 40). Based on studies on game-based fan sites, James Paul Gee and Elisabeth Hayes (2012) have identified features of nurturing affinity spaces that are supportive of learning. Affinity spaces honor craft knowledge and facilitate identity play and reflections on audience, genre, and process. In online affinity spaces, people can make, comment on, and share cultural artifacts (e.g., images, videos and texts), and by doing so, adapt and add to these artifacts' multimodal designs. Affinity spaces are typically linked to out-of-school practices (Gee, 2004). In my study, many of the students' interest-driven practices (photo and film editing, gaming, producing game walkthroughs, etc.) are examples of crossover skills, both present in the students' everyday literacies and integral to school assignments.

3.2. Multimodal representations

The theoretical field of multimodality places text making in a tradition of social semiotics and understands signs as multimodal, intentional, and culturally shaped (Kress, 2010). According to Gunther Kress and Theo van Leeuwen (2006), social semiotics is oriented to the observation and the analysis of the complexity of semiotic production, as well as to the discovery of new semiotic resources and novel ways of using existing ones. Here, Kress' (2010) concept of *the motivated sign* is relevant. In brief, this concept places agency on the sign maker and draws attention to the interests and the intentions that motivate the students' choices of semiotic resources. Multimodal composition involves the ability to design multimodal *representations*, and according to Kress (2010), the process of representation is identical to the shaping of knowledge. Following Kress, I view multimodal representations as materializations of the students' semiotic and interpretive work.

Current multimodal composition research has drawn on approaches beyond the linguistic model of social semiotics, including film, music, and gaming theories. As multimodal composition scholar Carey Jewitt (2008) has posited, gaming and gaming paratexts facilitate the movement of images and ideas across geographical and social spaces in ways that affect how youths interact and learn. Jewitt has also highlighted that digital devices constitute a key area of multimodal investigation because they make a wide range of representational modes available, often in "new inter-semiotic relationships" (2017, p. 452). Media researcher Lev Manovich's *remix* metaphor is useful in this context, capturing not only how different media types get remixed but also how ways of representation and expression cross over and combine (2013, p. 176).

4. Research design, methods, and data

4.1. Multimodal ethnography

My study draws on multimodal ethnography, a research framework that uses the social semiotic theory in ethnographic research to produce accounts of situated artifacts and interactions and the relations between them (Jewitt, Bezemer, & O'Halloran, 2016). Multimodal ethnographic approaches examine people's practices in socially situated sign processes, and the researcher is immersed in the participants' practices, language uses, and cultures, taking "an

emic perspective" (Purcell-Gates, 2011, p. 142). I spent 18 months with fifty 11–12-year-old students and their teacher, limited to the composition classes (usually twice per week), and utilizing a key methodology of modern ethnographic approaches – familiarity with the context in which the data are collected, participant observation, interviews, and field notes (Purcell-Gates, 2011). To elicit insider information and explore the literacy events in detail, four focal students were selected. These students were chosen because they demonstrated a willingness to talk about their writings and texts. This article features the two focal students whom I was able to observe in the PG composition phases.[2] The ethnographic work involved monitoring the two students' use of iPads in composing the PG texts, recording their talks around their texts, and analyzing the multimodal representations they produced.

4.2. Participants

The 12-year-old students Jon and Martin were skilled producers of online content and had similar investments in technology. Both were gamers, producers of video game walkthroughs and fan art, and participants of the school's game-based learning platform *Minecraft Education Edition*. They also belonged to various affinity groups where they interacted in terms of common interests. Jon created instructional gaming videos, applying many iPad apps, and had his own YouTube channel. Using several apps, Martin produced jingles and other musical pieces, frequently including them, together with sound effects and digital drawings, in school assignments.

4.3. Talks around texts

My interviews with the focal students ranged from informal conversations to more structured interviews. A form of semi-structured interviewing is called "talk around texts", using texts or artifacts as starting points (Page, Barton, Unger, & Zappavigna, 2014, p. 120). In these sessions, the texts and the multimodal representations produced by the students were used as the foci of the talks. Jon and Martin also engaged in conversations while they were writing (e.g., in peer-response activities), and these talks were recorded. Literacy events are constituted through dialogues, often relating to texts or images, which give oral language an important role. The talk-around-text method provided clues about the participants' perceptions on the context of writing in school, their partaking in affinity spaces, their multimodal choices, and thus about the underlying cultural practices.

4.4. The PG writing task

The objectives of the PG writing task were to "describe the mobile game *Pokémon Go* to a person who has never played it," "explain the different stages of the game," and "share tips and tricks of the game." Furthermore, the students were asked to evaluate the game and gaming by listing both "positive and negative aspects." In addition to depicting their ideas in words, the students were asked to "insert images and/or screenshots" (e.g., from their mobile phones). The assignment positioned the students as "game experts" by writing a descriptive and informative text addressing a less informed reader. In fact, not all the students were experts; some described themselves as "beginners." For the initial phase of the writing process, the teacher therefore provided the students with possibilities to engage in the game, using their mobile phones in school, and assigned the experts their roles as instructors. As all the students were familiar with the Pokémon characters and many talked about their favorite Pokémon, an add-on to the assignment was to "write a paragraph about your favorite Pokémon character, where you describe what it looks like."[3] Except for the call for insertion of images in the writing task, the illustration of the texts was not a topic in the lessons, leaving the representational choices up to the students themselves. The assignment served the purpose of connecting writing to authentic purposes and possibly taking a critical stance toward the game and the gaming activity. Finally, the writing task functioned as a prompt for multimodal composition (Kress, 2010).

[2] The students worked in pairs, and I chose to monitor the only pair that comprised two of my focal students.

[3] Translated excerpts from the written assignment about PG.

Table 1
Data from the PG writing project.

Data sources	Use in the study	Means of analysis
Written texts: Two students' PG text written in Pages	Used for analysis of multimodal representations	Social semiotic multimodal analysis (SSMA), theory-guided (deductive) text analyses
Talk around texts: Videotaped peer-response activity between two focal students	Allowed an understanding of the students' multimodal choices and participations in affinity spaces	Inductive coding based on the students' own words and phrases, rendered as excerpts in the analysis section
Screenshots: PG heading, logo, and fan art	Used for analysis of game-related artwork	SSMA, rendered in the analysis section (Figs. 1–6.)
Teacher's handout: PG writing task	Used to help frame the environment of text composition	Rendered in the introduction section
Field notes (seven lessons)	Provided additional insights into how the writing task was presented and what the students' writing processes and multimodal choices "looked like" to me as a researcher	Underlined features of the writing processes, and multimodal choices used as talking points in talks-around -texts

4.5. Data

The notion of a literacy event was used to focus data collection. In this paper, the focal literacy events informing the analysis include a peer-response session between the focal students Jon and Martin; the two boys' work on headings, logos and fan art; and their final PG texts. According to NLS researchers, this set of elements represents a linked chain of literacy events (Barton, 2007). I employed a combination of writing field notes and audiotaping and videotaping fast-moving events, such as the peer-response situation and talks-around-texts. The audiotaped and videotaped data were transcribed and translated into English. Videotaping also allowed screenshots of textual elements, such as various multimodal representations in the making. Finally, the students' texts[4] were collected, along with the teacher's writing task. The three-level description of the data (Table 1) shows the different types of data collected in relation to the PG assignment.

4.6. Analytical approach

As ethnographic approaches to literacy seek to explain, describe, and provide insights into activities in their contexts (Purcell-Gates, 2011), my analyses are directed toward the characteristics of the students' multimodal representations produced in situ. The early coding of the data began in the classroom when different instances of multimodality were beginning to emerge from the students' concept maps and PG texts. The notes and the questions from the handwritten field notes were marked, labeled, and used as talking points in the informal talk- around-text sessions. The second phase of the data analysis involved coding and categorizing, both inductively and deductively. In the inductive or "bottom-up" coding (Purcell-Gates, 2011, p. 150), the coding decisions were based on the students' own words and phrases. For example, when writing the PG texts, several students spent time exploring and choosing among the built-in fonts in *Pages*. In the peer-response session, Jon and Martin discussed "the real gaming text," "the language of gaming," "letters that grown-ups don't understand," and the desire to "create one's own 'text type'" (sic). All these codes relate to the *font* as a semiotic resource, a category of interest to the research focus and a central concept in multimodal theory.

SSMA emphasizes situated action and meaning. Several researchers have described social semiotic processes and different dimensions of representation (Jewitt, 2017: Kress, 2010; Kress & van Leeuwen, 2006). SSMA's descriptive framework has been used as a tool for the deductive, or rather, theory-guided, analysis of the multimodal representations. In my analysis, I relate key analytical points to central SSMA concepts: *mode, transformation, modal affordances, aptness, functional load,* and *salience. Mode* is a socially and culturally given resource for meaning

[4] Excerpts from the PG texts are paraphrased in the analysis section.

making. Writing, image, and layout are the dominant modes in the PG texts. According to Kress (2010), a design process that involves staying within the same modes, semiotic categories, and logics is called a *transformation*. The differing *affordances* (possibilities and limitations) of modes enable specific semiotic work to draw on these affordances. An important point here is that modal affordances are constantly reshaped, depending on the need of those who make meanings (what they consider *apt*), their rhetorical assumptions in the environment of communication (what they decide should have a *functional load*), and what is foregrounded in the texts (what they choose to make *salient*).

5. Analysis and findings

5.1. Design of the heading: salience and aptness

This section focuses on the process of designing a PG-heading and draws on a videotaped session of the focal students Martin and Jon in a peer-response activity. In this setting, the boys were supposed to read and comment on each other's texts; instead, they drifted into exploring a free online logo maker program, *Vistaprint.no*. This website gave them access to a range of images, fonts, and colors for designing their own logos. In the following excerpt, Jon shows me (E) how the program works and designs his own PG logo, which Martin evaluates. The italicized texts in parentheses describe how the boys interact with the digital interface.

E: Where did you find this website Vistaprint?

J: I just googled "How to make your own logo." OK, now I'm going to make my own *Pokémon Go* logo. Let's see. . . (*searches for figures*). These are. . . not cool. (. . .) This one might fit!

E: What makes it fit?

J: 'Cause it looks a bit like a Pokéball. And then I choose. . . I need to fix a text (*types*). This works!

E: Why do you think this font works?

J: 'Cause it's bold. E: Does the game logo have a bold font? J: Yeah, and this one is cool. If I'm able to change the color of it (*explores color options*). No red color, though. Well. Done! So, this is my new *Pokémon Go* logo! (*shows me his iPad*) (Fig. 1).

Fig. 1. Jon's Pokémon Go logo in Vistaprint.no.

J: And now I can use this logo as the title for my text. Let's see what that looks like (*replaces title with the newly made PG logo*).

E: And what do you think about that?

J: Ahhh, I think it looks cool. What do you think, Martin?

M: Pokémon Go! (*reads Jon's title*). But it doesn't look like a Pokéball. (*points at the iPad screen*).

J: No, I know. So maybe I'll just undo it (*deletes the logo and replaces it with a different title*) (Fig. 2).

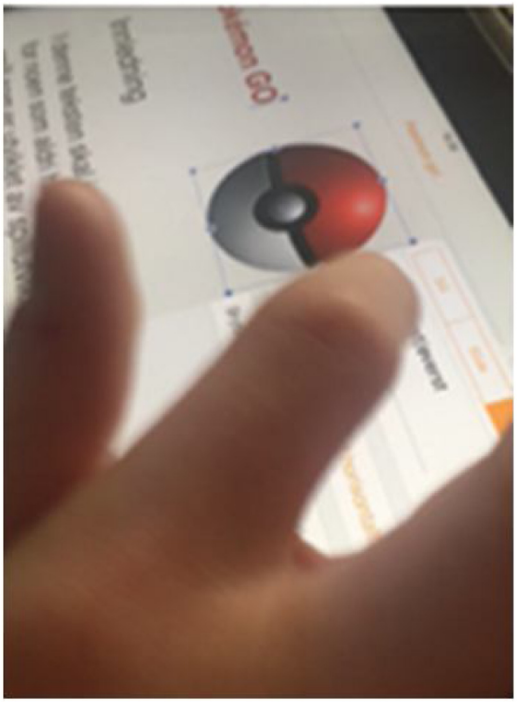

Fig. 2. Jon makes his second PG- title.

Extracting multimodal representations, such as the making of this logo, for examination directs analytical attention to the design details. Fonts, images, and the layout are chosen and represent the focus of the individual's interest (Kress, 2010). Jon is a gamer at level 22 in PG; he takes an affective stance toward it by describing it as "a fun mobile game for children from the age of 5 to 80." Jon's choice of design elements is based on his interest in the game and the brand name's features. In this representation, he chooses a bold font and the most appropriate figure and color scheme to resemble the classic PG ball, based on what he considers the most apt image/text design. Here, the newly made sign complex does not involve shifts in modes (cf. transformation). The Pokéball is represented as a ball-like figure, and the game's name remains to be in writing. According to Kress and van Leeuwen (2006), the left-right placement creates a given- new structure. In this composition, the ball is placed to the left and thus presented as something that the reader/viewer already knows.

As shown in the preceding dialogue excerpts, Jon's process of creating and then (prompted by Martin's comment) deleting his PG logo represents an early-phase design that he later rejects. Instead of the ball made in *Vistaprint*, he ends up using the heading shown in Fig. 3, where the official Pokéball image serves as the letter "o" in "Go." This type of textual integration gives the image its *functional load*. The placement and the color of the ball also make it stand out from its surroundings; this eye-catching feature attracts the viewer's attention. In multimodal theory, this type of visual weight is referred to as *salience* (Kress & van Leeuwen, 2006).

Fig. 3. Jon's third and final heading.

Martin chooses a different semiotic solution for his heading, namely a pictorial written language imported from the PG website, the so-called Pokémon alphabet. This heading (Fig. 4) consists of curling letters, with the Pokéball at the center of each letter, giving a resemblance of eyes. Here, the heading's essential purpose remains intact, communicating the text's topic. Furthermore, it is an example of multimodal stance-taking, reflecting Martin as a gamer, possibly a PG expert. Finally, his use of recognizable visual-linguistic cues addresses and includes fellow PG players (Sabatino,

2014). The visual character of written text has always been present in typography, but as these two examples show, the font as a phenomenon is of interest to students and increasingly contributes to the ways in which they make meanings.

Fig. 4. Martin's heading using the Pokémon alphabet.

All the students in my study paid attention to non-verbal aspects, such as typography and layout, and to the design features of web-based texts, such as imagery, color, heading, and so on. Many of the students chose a plain or colored PG heading (19 of 42 students) or inserted an image of the official logo (23). Two students made collages, which included the official logo and their choice of their favorite Pokémon. While most students chose a copy-and-paste practice for their headings, reusing readymade material, Jon's and Martin's different design solutions demonstrated their familiarity with the semiotic features of PG, as well as their status as gamers. Jon and Martin also knew how to select and digitally adapt semiotic resources, resulting in apt and innovative designs.

5.2. *Affinity spaces and fan art*

Many games, including PG, allow players to modify them by using the design software that comes with each game. This process is close to how Jon navigated the website when he redesigned the logo and is an example of a crossover between gaming and writing. PG also has a fan community, a fandom, devoted to mastering the game and creating artwork (fan art). For Jon and other gamers, such communities are affinity spaces centered on producing things and honoring craft knowledge. The following excerpt (from the same peer-response activity as the preceding one) shows how Jon and Martin create and discuss character collages, as well as positions the boys as PG fans:

E: What do you call these? (*pointing at Jon's iPad screen* [Fig. 5])

J: Fan art.

E: Fan art. Is that the name of a website you visit or is it a type of text?

J: It's a type of. . . No, it's a thing you create

M: Say if you're drawing something for something you like, then you are a fan. You know what that is? And art, that is the drawing.

E: So, it is like drawing or writing on an image?

J: Yes. Like this one (*points at his screen*).

E: What are they for? Do you share them with others?

M: Yes.

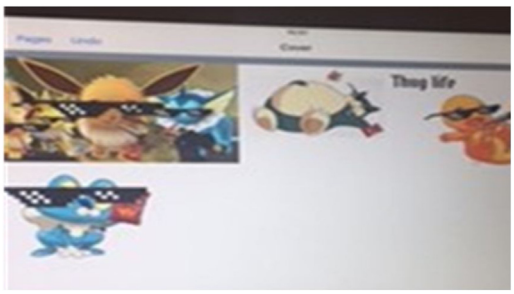

Fig. 5. Pokémon fan art.

In Fig. 5, all the Pokémons are wearing sunglasses, a prominent semiotic feature. The retro glasses are salient fan art accessories and can be downloaded as free templates from clip art websites. This collage technique supports the visualization of selected segments and requires familiarity with photo editing, layering, and multimodal composition. In contrast to me, the boys seem confident with the name of the kind of artwork they are creating (fan art) and its purpose (sharing with others). Game-related affinity spaces, such as the PG fandom, are commonly organized to allow

Fig. 6. Thug life Charmander as a screensaver.

and encourage anyone to learn to build, design, remix, and share. Games that emphasize the involvement of players as designers and encourage the development of creative game design communities are "particularly good for fostering skills with technology and design and learning in the 21 st century" (Gee & Hayes, 2012, p. 4).

The next fan art example (Fig. 6) shows Jon's iPad in the screen saver mode. Here, the Pokémon Charmander is portrayed as wearing sunglasses and lighting a cigarette (or a joint?) with its burning tail. In the excerpt below, Jon shows Martin and me his latest piece of fan art, "Thug life," and explains his design.

J: I made this piece today, actually!
(*shows us the screen saver image "Thug life").*
E: Sunglasses and a cigarette?
J: Yes (*laughs*).
E. Why did you include those things?
M: (*interrupts*) Because it's cool!
J: Because he lights the cigarette with his burning tail.
E: And do you know what Thug life means?
J: Eh. . .no. But it looks cool when others use it.

In the PG game, Charmander's tail burns fiercely when he becomes enraged or is happy. However, the cigarette, which has the shape of a joint, and the heading "Thug Life" are associated with underground fan art, typically shared on social media (e.g., YouTube, Facebook) and other photo-sharing platforms (Pinterest, Deviantart, etc.). Jon's chosen font is a Gothic black letter font available in *Pages* and resembles the Thug Life logo rendered on social media.[5]

Shifting technological landscapes have allowed increased production and circulation of multimodal fan compositions such as these. Though changes in technology may shift the places where multimodal composition is created by and for fandoms, the purposes of these texts remain consistent – to be circulated among individuals with shared interests in order to maintain a collective identity across time, space, and technologies (DeLuca, 2018; Kahila et al., 2020). The boys' reactions to my questions indicate their awareness that this piece of fan art stretches the boundaries of "schooled" multimodal composition. Jon does not know the meaning of "Thug life"[6] but has adopted a kind of taboo visual practice common in some fandoms. When Jon hands in his finished text, "Thug life Charmander" is replaced by a more innocent-looking Charmander taken from the official PG website gallery. In other words, "Thug life" remains in this underground or hidden literacy practice, thus serving as an example of Maybin's (2007) under the desk literacies.

5.3. Jon's PG text: redesigning and representing the abstract

The assignment was to write a descriptive text about PG, including a discussion where the students were asked to list positive and negative aspects of playing the game. This hybrid writing task opened for stance taking. Jon has

[5] For example, see dafont.com and pinterest.com.
[6] Thug Life was a rap group formed by 2Pac. According to the Urban dictionary, it is an acronym for The Hate U Give Little Infants Fucks Everyone (https://www.urbandictionary.com/define.php?term=Thug%20Life).

Fig. 7. Positive aspects of playing PG.

chosen "Positive" and "Negative" to signal the two paragraphs that answer the discussion part of the task. According to him, the positive aspects of playing PG revolve around the fact that it is an outdoor social activity: "When gamers are playing Pokémon Go, one spends more time outdoors instead of just staying at home gaming. Being out, one can team up with new friends to hunt for Pokémons." This paragraph taps into the very narrative of Pokémon (i.e., travelling the world to catch creatures), and Jon illustrates this point in a collage combining two images. The three-dimensional illustration of three friends is taken from Can Stock Photo (Fig. 7). Jon has adjusted the original image by rotating it 180 degrees clockwise and has attached a mobile phone displaying the PG game. The phone attracts the viewer's attention due to the contrast in color, establishing *salience*. This example shows how Jon has used existing material to make a new sign and in this remix process, has transformed or redesigned the semiotic resources to fit the new context.

Positivt
Når spillere er ute med pokémon
go, er man mer ute enn hvis man
bare sitter inne å spiller online. Og
når man er ute, kan man få nye
venner å møte opp sammen
senere på pokémon jakt.

The image presents the unfolding game activity among friends, corresponding to the topic of Jon's written text. The mobile phone that Jon has placed in the hand of one of the game-playing friends displays a scene from the PG game. In other words, the gaming process is represented both linguistically and visually, creating multimodal *cohesion*. The image restates the information in the written text, a form of information linking referred to as *elaboration* (Kress & van Leeuwen, 2006).

Representations such as these show how students relate to the subject and what they think is worthwhile to communicate to a reader. In Jon's text and illustration, the focal positive aspect of playing PG is being outdoors with friends, which presumably is how Jon interprets his own PG gaming experiences. In line with Manovich's (2013) remix metaphor, Jon's representations also reflect his reception of the PG technology. In this case, Jon has managed to represent abstract concepts, such as friendship or sociability, tied to another abstract phenomenon, the positive aspect of gaming, a combination of entities that would be difficult to represent with a literal image. Mastering abstract concepts such as these is a process of making analogies, comprehending them in concrete terms, and finally representing these ideas using the most apt semiotic resources. Here, the newly made collage rests on or materializes the sign maker's interest, and it is a motivated sign that possibly serves to persuade less informed readers to engage in the game. The playful text/image relation also indicates audience awareness.

The next example (Fig. 8) deals with the negative aspects of playing PG. The opening paragraph corresponds to the previous one: "When you are out (gaming) with friends, accidents easily happen. Example: traffic. Someone broke a

Fig. 8. Negative aspects of playing PG.

leg in Frognerparken in Oslo, so accidents might happen😬 .” [7] Here, the use of the grimacing face emoji is an example of how the text-message genre permeates the iconography of contemporary childhood and subsequently, children’s schoolwork. Five more students have used various emojis in their PG texts, and two students have introduced a new paragraph with the graphic elements ≑; representing the face of Pikachu, the most popular character in the Pokémon series.

Negativt
Når man er ute med venner kan
det fort skje ulykker eks: trafikk.
Noen brakk benet sitt når de var i
Frognerparken i Oslo, så det kan skje uhell😬

The focal narrative element in the preceding excerpt is the accident, a semiotic pattern established textually (“negative,” “accidents,” “broke a leg”), in the use of the emoji, and in the illustration of the car hitting the PG-gamer. This combination creates multimodal cohesion. This illustration (Fig. 8) from Pixabay has a vector, comprising lines signifying the speed and the impact. The contrast between the white driver and the black pedestrian provides directionality. The image of the mobile phone is reused as the salient feature reminding the viewers that this is PG gaming.

Six of the students have not discussed the positive and the negative aspects of playing PG, and only three have chosen to illustrate this part of the text. While Jon has arranged metaphorical collages, two other students have inserted literal images (i.e., photographs of a car driver holding a mobile phone, leaving it up to the audience to imagine that the driver is playing PG on his phone). This example shows that when readymade images to represent Jon’s ideas are unavailable, he makes new images by combining them. The visual representation of positive and negative aspects is a result of mapping pertinent features, where Jon associates “positive” with “friendship” and “negative” with “accidents.” Most of his classmates (40) have discussed PG gaming in relation to being with friends and doing physical exercise outdoors, whereas the negative aspects of playing have been linked primarily to traffic accidents (38). Other negative aspects listed in the texts are gaming addiction (29) and the time and the money spent on gaming (10).

5.4. Martin’s PG text: the walkthrough genre, audience-awareness and the insider perspective

“This is a descriptive text about Pokémon Go written for a person who has never played the game.” This first sentence in Martin’s introduction sets the tone of voice for the rest of his text, where he instructs the reader on how to download and play PG.

[7] The incident referred to by Jon and his classmates occurred at a PG-Lure Party in Oslo in 2016 and was featured in the news.

Gym: Hva er en gym? Jo en gym er hvor du kan kjempe mot andre spillere for og bli den beste! Men først må du velge ett team. Det er tre team! Det er rødt, gult og blått. De heter Mystic, Valor og Instinct. Du må også være på minst level (nivå) 5 for og kunne konkurrere. Når du vinner pokégyms går gymmen ned i level, da trykker du på OK, og da får du xp, hvis gymmen er blå og du er rødt team og du kjemper og vinner over alle pokémonene blir gymmen grå (nøytral), da kan du legge inn din egen Pokémon. Når du har gjort det så får du en defender bonus. Om du tar 4 pokégyms på en dag kan du få 4 pokégyms. Men da må du vente ett døgn før du kan få neste.

Pokéstop: I et pokéstop kan du samle mere (ting) items. Som som Pokéballs, eggs, potion, revive, incense, razz berries, lucky eggs, Great balls, ultra balls og lure modules. Pokestops er de blå søylene du ser rundt omkring på kartet. Oslo er det beste stedet for Pokemon jakt og det stedet der det er mest Pokestops, i Norge.

Pokédex: Pokèdex er der du registrerer Pokémons når du har fanget dem. Om du fanger en ny Pokémon du ikke har fra før, kommer det en slags film. Da står det registered to pokédex. Da får du en del xp.

Fig. 9. Excerpt from Martin's PG text.

The following excerpt (Fig. 9) shows how Martin presents some of the most important PG terms (Gym, Pokéstop, and Pokédex) in separate indexed paragraphs. This creates a procedural reading path that simplifies the reader's work. In the first paragraph, Martin presents the three PG teams (Mystic, Valor, and Instinct) in their respective colors and instructs the reader to select a team. Furthermore, he instructs the reader on how to battle a gym: "You need to be at level 5 to compete. When you win the gym, you press OK and you'll get XP (. . .)." Martin has left out the fact that there are two kinds of gyms (rival and friendly) and that rival gym battles entail lowering an opponent's prestige level. However, he tells the reader how to claim a new Pokémon: "If you catch a new Pokémon, a kind of film appears and it says 'registered to pokédex' (. . .)." He also shares an insider tip on where to hunt: "Oslo is the best place for Pokemon hunting and is the place with the most Pokestops, in Norway."

Martin's text shares the same logics and content as those of many of the PG paratexts. The structure and the layout are similar to those of the PG glossaries of commonly used terms, and the reader-oriented instructional style resembles the one found in game walkthroughs. Martin addresses the reader directly using the pronoun "you," a technique that pulls users into the information and makes it relevant to them. Furthermore, he has chosen to write the PG lingo (e.g., level, items, registered to pokédex) in English, followed by the Norwegian terms in parentheses. These examples indicate that Martin understands the walkthrough text as a genre and purposefully uses this prior genre knowledge to compose his own text. Furthermore, the insider information that Martin shares is typical of PG strategy guides, as this game does not offer a tutorial on how to play it. Another consideration regarding the game is that players need information on Pokémons' location (Tran, 2018). Martin's text attends to both these aspects. He positions himself as a PG expert, an "insider" who presents the terminology and simplifies the gaming procedures to the level of a less informed reader/player (Gee, 2007). In this case, the insider perspective might be the reason why Martin has forgotten to include the point of joining gym battles. As fighting for honor and territory is a common narrative feature of most games, this "goes without saying" in Martin's text. In other words, this element is tacit knowledge in gaming literacy (Arduini, 2018; Gee, 2004).

6. Discussion

As shown in the analysis, Jon and Martin demonstrate purposeful and innovative uses of semiotic resources in self-representation, stance taking, and audience awareness. The analysis also indicates the use of their prior genre knowledge of the PG paratexts (fandoms and walkthroughs). The boys are participants of a maker culture around PG, and their game-based literacy practices both inform and inspire their texts. They demonstrate digital literacy skills and explore designs that are specific to gamers, which, in turn, cross over to the digital environment of text composition in school. In the following paragraphs, the key didactic implications of such crossovers are discussed.

The first step of the PG assignment was to play the game in the schoolyard. Focusing on the actual gaming experience allows the students to present the game from that experience and be agentive and engaged writers, as

reflected in Jon's and Martin's texts. The examples from Jon's texts show that he gives designed prominence to the images (e.g., logo, fan art, and collages). He composes multimodal representations in various design programs and creates multiple layers to assemble his final images. Martin also presents himself as a gamer and positions himself as an insider/expert. In the text, he takes on the tutor role, mimicking the layout practices in game-related paratexts. The visual and linguistic connections that the boys make with the PG-maker culture constitute an important driving force in their active self-representation as gamers and sign makers. Inviting gaming into the classroom is one way of connecting school literacy with the students' own life-worlds, shaping opportunities for identity expression and play (Daniel-Wariya, 2016; DeLuca, 2018). Furthermore, applying gaming to composition classrooms could foster students' abilities to collaborate, analyze, and recognize visual cues (Sabatino, 2014). Nonetheless, not all the students are PG players or involved in game-related affinity spaces. The findings also illustrate the need to provide students with rich and wide-ranging examples of multimodal texts that they might model. Extending literacy education beyond the school means including and addressing the linguistic, semiotic, and digital assets that the students possess in various affinity spaces. This approach aligns with other multimodal studies' call for a curriculum that connects with students' out-of-school digital and multimodal repertoires (Jewitt, 2008).

In the selected multimodal representations, different semiotic modes (images and words) work together in stance-taking acts, broadly defined as a position taken by the writers in relation to the content and the audience (Barton & Lee, 2013, p. 31). The images are edited in ways that index a certain kind of position of the stance takers (e.g., gamers, producers of taboo fan art, etc.). Stance takers may also opt to project their sense of self through a particular style of writing, such as Martin's use of an expert voice when describing the game. Discussing a game or gaming in writing allows the explicit teaching of multimodal stance taking. Instructor-led dialogues could focus on the semiotic resources available to students, their applied visual and linguistic markers of subjectivity and affectivity, and the rhetorical techniques that can be used to accomplish their goals. These dialogues could in turn help students realize that their representational choices are acts of positioning and expand their literacy options. Cultivating meta-awareness about writing, language, and rhetorical strategies might positively impact the ways that students assess and adapt to writing demands across disciplines (DePalma & Alexander, 2015).

DePalma and Alexander have also described the challenges related to audience adaptation that graduate and undergraduate students face in carrying out multimodal composition activities, primarily because the students view multimodal composition as opposed to "academic" writing and perceive the "public" as an ill-defined mass (2015, p. 186). In contrast, the audience in the PG assignment is well-defined, and the students are able to address their readers. Writing a descriptive text to "a person who has never played PG" assigns expert roles to the students and requires texts that are adapted to assist the less informed reader. As pointed out by DePalma and Alexander (2015), writing as experts, students can focus on the purpose, audience, and content of instructional writing, instead of aimlessly listing the steps of a random process. Focusing on a specific audience, most of the students are also able to select among modalities and adapt semiotic resources to suit the objective of the PG task.

As posited by Howell (2017), PG is a multimodal digital text with its own affordances, which means that it can be used to introduce key terms in multimodal composition. Applying new terms to a familiar genre could help students assess the possible uses of different modalities (*functional specialization*) and develop a more nuanced understanding of the unique affordances of modes and resources (Kress & van Leeuwen, 2006). In her research on PG as augmented reality, Brenta Blevins (2018) has emphasized that PG makes meaning through the layers of multiple modes and has suggested the textual layer as a composing concept. Identifying the layered modes (linguistic, visual, auditory, gestural/haptic, sound, and combinations) available in games could help students gain proficiency in analysis and compose layers on their own (Blevins, 2018). Building on Manovich's (2013) views, Blevins' approach encompasses teaching about composing concepts and giving explicit software instruction in preparing students to become communicators capable of composing in multiple media.

NLS scholars have examined composition as an act that is performed across multiple modes, and iPads represent the latest in a series of technology-based learning aids that facilitate such multimodal composition. Students, here represented by Jon and Martin, embrace the multimodal possibilities afforded by iPads. First, they think about not only the content of their texts but also how the text is displayed on screen, and they make their representational choices accordingly. Second, the literacy apps provided by the school, such as the video apps, *Pages,* and *PhotoGene* are also employed in the production of posters, fan art, and walkthroughs. Finally, the boys' actions through their iPads are transformative; the digital techniques and the work methods they apply in various affinity spaces are similar to those that they use in multimodal composition. The boys' familiarity with communicating in various digital spaces and their

transfers of techniques and ways of representation between these spaces aligns with Manovich's characterization of "prosumers" (2013, p. 205). By recognizing these kinds of transferrable prosumer practices, instructors of multimodal composition can better prepare students for the communication practices of the twenty-first century (Arduini, 2018; Erstad et al., 2007).

The classroom where I have conducted my research has a range of unofficial literacy activities that are related to, but not part of, the PG writing task. The two boys' playful creations of logos, headings, and fan art are in themselves acts of stance taking, demonstrating their affiliation with the PG universe. These activities run in parallel to the teacher-led composition class and do not find their way to the teacher's radar screen. Following Maybin (2007), I have chosen to present these activities as focal literacy events. The reason is not because that they are more interesting than the official activity of composing descriptive PG texts but that they help make visible the multimodal designs in which the students are engaged, as well as throw into sharp relief the skills that might otherwise be hidden to practitioners (Blevins, 2018; Maybin, 2007; Walsh, 2010). Foregrounding these "off-task" activities could also fuel the discussions on what counts as literacy (Juuhl & Michelsen, 2020; Wohlwend, 2017), and thus influence and alter conceptions about school literacy practices.

7. Limitations

This small-scale study's findings cannot be generalized. Nonetheless, it provides a window into the educational value of a technology such as PG and how iPads can facilitate crossover skills in multimodal composition. Most multimodal studies analyze (often in detail) selected small fragments or small sets of multimodal texts (Jewitt et al., 2016). Foregrounding two students' practices and texts enables me to give due recognition to the characteristics of multimodal design and to their interests as sign makers but prevents a thorough presentation of the semiotic complexity and richness of the data. As my research design privileges the students' voices and their multimodal representations, I have not explored the explicit teaching of multimodality in digital environments or the relationship between teachers' pedagogical beliefs and iPad use in multimodal composition. This underscores the need for further research on multimodality and digital literacy.

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