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# English language teaching of attitude and emotion in digital multimodal composition



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### ABSTRACT

This paper shows how a linguistic framework describing resources for expressing attitudinal meanings, and its extrapolation to images, informed a multimodal authoring pedagogy designed to extend year five students' repertoires for evaluative expression. The teachers' linguistic and visual semiotic knowledge of attitudinal expression and their knowledge and confident use of digital multimodal authoring software were developed through professional learning and collaborative lesson planning with the research team and through modelling of the pedagogy by a professional media artist in the classrooms with the teachers. The emphases were on student enjoyment, building competence and confidence with the authoring tools, extending their repertoires for multimodal expression of attitude, and concomitantly establishing their knowledge of a metalanguage describing types of attitudinal meaning. Students' digitally created comics dealing with ethical dilemmas demonstrate their use of sophisticated evaluative language and of visual techniques such as facial expression, gesture and focalization. The students' declarative knowledge of resources for expressing attitude was demonstrated in interviews through their prompt exemplifying responses and their use of metalanguage describing different categories of attitude. Pre- and post-test results also showed their expanded knowledge of nuanced expressions of attitude and their ability to identify different types of attitude in text examples.

### 1. Introduction

Developing repertoires for the nuanced expression of emotions and opinions is crucial for learners of English as an additional language (EAL) to achieve success in contexts where English is the language of education. It is similarly central to participation in many contexts of online social media, such as posts, blogs, and video sharing, where evaluative commentary and response are so prevalent. Emotive language use through speech and writing is concomitant to sustained academic and social achievement, while the inability to communicate and interpret emotions is associated with poor social outcomes (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Bänninger-Huber, 1992; Mills & Unsworth, 2018). In terms of language resources, the subtle and sophisticated use of appraisal resources for communicating evaluative meanings has been shown to be indexical of high-quality narrative writing by elementary and high school students (Macken-Horarik & Sandiford, 2016; Macken-Horarik, 2003; Ngo, 2016; Rothery & Stenglin, 2000). These appraisal resources have been systematized by Martin and White (2005) and pertain to three categories of attitudinal and evaluative meanings: i) feelings, ii) judgements about the capacities and characteristics of individuals, and iii) appreciation of the

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significance and qualities of natural and artificial phenomena. These categories are collectively referred to by [Martin and White \(2005\)](#) as attitude.

In countries where English is the language of schooling, young EAL students frequently appear to achieve impressive competence in everyday use of the language quite quickly, but more subtle and specialized uses of language may not be as readily assimilated ([Hinkel, 2005; Spies & Dema, 2014](#)). The rich and varied resources for the expression of attitudinal meanings involving emotions and evaluation through opinions and judgements are linked to 'complex linguistic and cultural understandings around the weight of words and what they insinuate' ([Australian Curriculum, Assessment and Reporting Authority \(ACARA\) \(2014\)](#), p. 52). Doctoral level EAL students who have attained very high scores on the International English Language Testing System (IELTS) assessment required for entry to postgraduate study, have been found to have very constrained repertoires of these 'appraisal' resources ([Ngo & Unsworth, 2015; Ngo, Unsworth, & Feez, 2012](#)). It is therefore, not surprising that this is a challenging aspect of language learning for EAL learners and students from language backgrounds other than English, who 'will still be developing a basic vocabulary and may not understand the nuances between word choices' ([Australian Curriculum, Assessment & Reporting Authority \(ACARA\), 2016](#), p. 52).

While developing advanced facility with appraisal resources is challenging for EAL students in schooling, it is also a vital aspect of their participation in multimodal online communication and digital social media. The inherent multimodality of text composition in paper media involving diverse kinds of meanings made through various fonts, colours, and layouts, and augmented by the incorporation of images, has been massively expanded by the affordances of digital media, such as dynamic text, animated gifs, embedded animated and live action videos, voice over, music, and sound effects. Today the accessibility, affordability, and ease by which users can produce and disseminate digital content via the Internet and mobile technologies has made multimodal text production a habitual and sizable part of the everyday life of people across different age groups, cultures, and societies. The ubiquitous creation and amplified circulation of multimodal texts online emphasize the importance of being able to interpret and create multimodal representations of emotions and attitudinal meanings ([Mills, Bellocchi, Patulny, & Dooley, 2017](#)). Developing this capability needs to be directly addressed in the education of EAL learners whose growing up now inevitably involves their roles in a multimodal online participatory culture ([Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009; Kress, 2000; Unsworth, 2006](#)).

The work reported in this paper is part of an Australian Research Council funded project designed to develop the multimodal language of emotions of elementary school children from educationally disadvantaged, low socio-economic status communities, which include significant numbers of Indigenous and EAL students ([Mills, Stone, Unsworth, & Friend, 2020](#)). The study sought to address the following research questions:

- 1) How and to what extent can multimodal authoring pedagogy develop students' repertoires for the nuanced expression of evaluative meanings of affect, judgement and appreciation in their spoken and written language?
- 2) How can a multimodal authoring pedagogy develop students' capacity to interpret and create visual representations of affect, judgment, and appreciation through the affordances of animation?
- 3) How can students' learning of a shared metalanguage for teacher-student-peer discussion of the deployment of the evaluative resources of images and language be demonstrated?
- 4) To what extent can students' multimodal narrative authoring techniques be developed to incorporate complementary visual and verbal expression of affect, judgments about individual capacities and ethics, and appreciation of the significance and qualities of artificial and natural phenomena?

## 2. Theoretical background

The linguistic basis for the pedagogic intervention in this study is 'the appraisal framework', a seminal systemic functional linguistic account of the language of evaluation in English ([Martin & White, 2005](#)), and later adaptations of this work intended to inform literacy pedagogy ([Humphrey, Love, & Droga, 2011; Humphrey, Droga, & Feez, 2012](#)). Researchers ([Economou, 2013; Mills, Unsworth, Bellocchi, Park, & Ritchie, 2014; Unsworth, 2015; White, 2014](#)) adapted the appraisal framework to develop accounts of evaluative resources in images. More recently, [Mills and Unsworth \(2018\)](#) applied the appraisal framework to research elementary students' two-dimensional iPad drawing animations of intensifying affect (e.g., wistful, despondent, depressed).

The appraisal framework is located within systemic functional linguistic (SFL) theory principally developed by Michael Halliday and his colleagues (e.g., [Halliday & Matthiessen, 2004; Martin, 1992](#)). In SFL there are three dimensions of meaning, called metafunctions, that always function concurrently in all instances of all languages: i) the ideational metafunction refers to the representation of events, participants, and circumstances in experience, ii) the interpersonal metafunction refers to the construction of relationships, and iii) the textual metafunction pertains to the relative information value among textual elements ([Halliday & Matthiessen, 2004](#)). The appraisal framework elaborates Halliday's interpersonal metafunction. Sophisticated knowledge of resources for constructing interpersonal meaning is key to students' capacity to develop believable characters in narratives, and in eliciting empathy and the emotional involvement of readers ([Mavers, 2014; Su, Pham, & Wardhani, 2007](#)).

The appraisal system is one of the leading frameworks that systematizes a linguistic approach to describe attitudes in discourse semantics. It concerns three interacting elements: attitude, engagement, and graduation. While attitude attends to evaluative meanings concerning i) affect, ii) judgements, and iii) appreciation, engagement addresses the sources of the evaluation expressed, the alignment of the author with these, and the extent to which the evaluations are portrayed as negotiable. Graduation deals with the amplification of meaning along a gradient of intensity of affect, judgement or appreciation (e.g., satisfied, indulged, satiated). Different intensities of the same attitudinal meaning can also be expressed using different lexical items (see [Fig. 2](#)). For example, a continuum from low to high to communicate feeling scared could be expressed as 'disquieted', 'anxious', or 'distraught'.

This kind of graduation relies on a repertoire of ‘non- core’ vocabulary (Carter, 1987) involving ‘semantic infusion’, in which the intensification is fused into the lexical item itself (Martin & White, 2005). Carter (1987) explains the relationship between ‘core’ and ‘non- core’ vocabulary through a number of distinguishing tests. One such test is syntactic substitution where non-core vocabulary such as ‘gobble, dine, devour, gormandize’ could be defined using the core word ‘eat’ to express a basic semantic feature, which would then be qualified in different ways to characterize the various non-core vocabulary; however, it would be inaccurate to define ‘eat’ with reference to any of the non-core set. Examples provided by Carter include those below with the core word are underlined in each case:

walk, perambulate, stroll, saunter, hike, march  
fat, podgy, corpulent, stout, overweight, plump, obese  
thin, weedy, emaciated, skinny, lean, slender

Another test is antonymy in which the less core a word is the more difficult it is to find an antonym. For example, ‘fat/thin’ and ‘laugh/cry’ are readily opposed, but it is more problematic to identify precise antonyms for items at different points in the semantic space created by these words. Hence, by this definition, words like ‘emaciated, corpulent, obese, guffaw, sob’ are non-core words. The several such tests explicated by Carter show how core words are more discoursally neutral than non-core words.

Apart from semantic infusion, graduation can be achieved when a separate or isolated item is solely, or at least primarily, responsible for the intensification of the evaluation involved. This isolated category of graduation may involve combining a grammatical item with the lexical item, as in ‘*very* beautiful’, or by combining the lexical item with another lexical item, as in ‘*dreadfully* upset’. It can also involve the use of figurative language, e.g., ‘an ice-cold stare’ compared with ‘a disinterested stare’ (Martin & White, 2005).

The attitude network (Fig. 1) addresses three axes of meaning—*affect* (emotions), judgement (of people), and appreciation (of nonhuman things). The network includes four broad categories of affect—disinclination/inclination, unhappiness/happiness, dissatisfaction/satisfaction, and insecurity/security. For example, disinclination/inclination describes fear (e.g., concern, trepidation, terror) or desire (e.g., want, longing, yearning). Unhappiness can include feelings of melancholy (e.g., wistful, downcast, despondent) or aversion (e.g., dislike, hatred, abhorrence), and happiness can include gladness (e.g., pleasure, delight, euphoria) or affection (e.g., fondness, love, adoration). Each of these may be descriptions of emotions (e.g., ‘The tourists became petrified’) or behaviors that indicate emotional states (e.g., ‘The boy whistled cheerfully’).

Within the attitude network the judgement of people involves two main dimensions — social esteem and social sanction. Subcategories within social esteem are capacity (which can be physical, mental or social capacity), tenacity (which refers to steadfastness and reliability), and normality (which address the normative location of a person’s physical, mental, and social characteristics). Within judgement, social sanction deals with meanings concerning a person’s honesty and ethics. Appreciation concerns evaluation of nonhuman phenomena in terms of their significance or aesthetic features, such as complexity and balance (Martin & White, 2005).

Martin and White’s (2005) appraisal framework addresses not only the language resources that realize attitude directly, but also resources for indirectly communicating attitudinal meanings. The direct realization of attitudinal meanings is ‘inscribed’ (e.g., ‘he was frightened’, or ‘he was scared’), but such meanings can also be communicated indirectly, or invoked, as shown in Fig. 2, adapted from Martin and White (2005, p. 67). There are different categories of invocation along a continuum based on the strength of inference of attitudinal meaning. The strongest type of invocation is ‘provoke’, which involves the use of figurative language, such as similes and

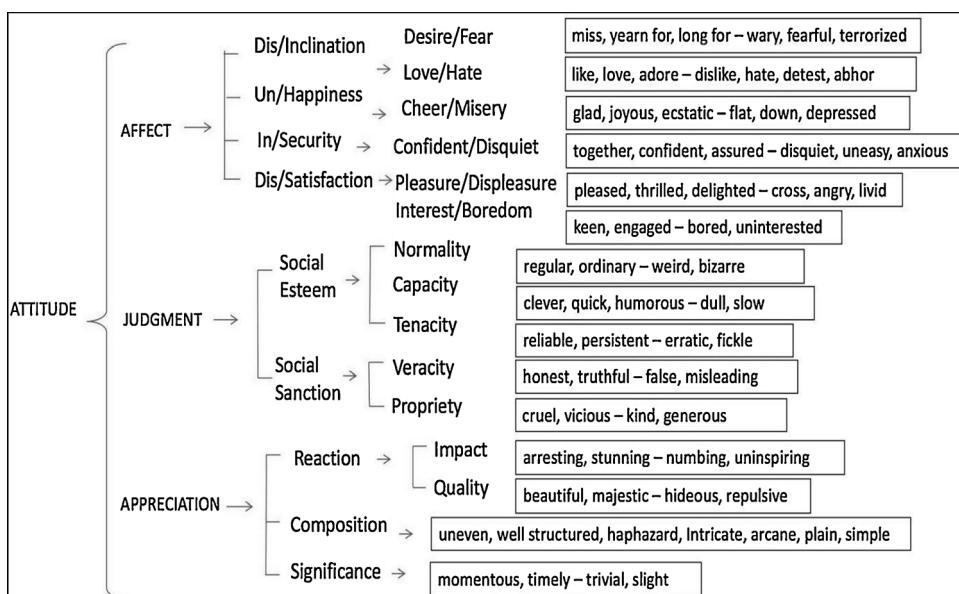


Fig. 1. The attitude network (adapted from Mills & Unsworth, 2018 and Martin & White, 2005).

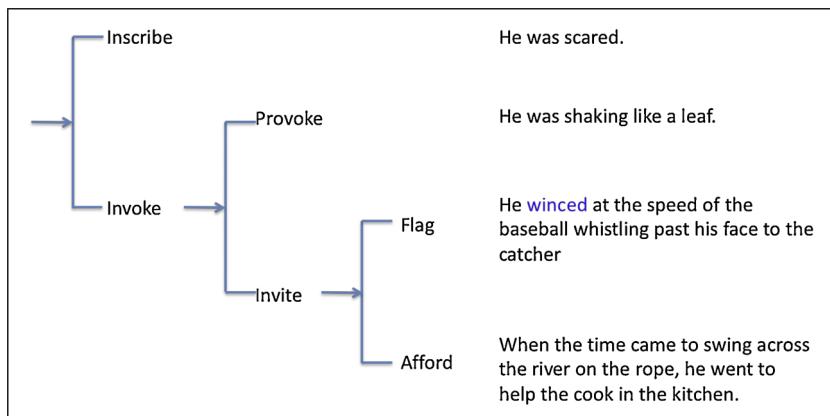


Fig. 2. Strategies for inscribing or invoking attitude (adapted from Martin & White, 2005, p. 67).

metaphors. For example, ‘shaking like a leaf’ does not inscribe fear but very strongly invokes that meaning, just as ‘He is a snake in the grass’ strongly invokes treachery. Non-core vocabulary that have manner infused, such as ‘smashed’ or ‘wincing’, invoke attitude, although not as strongly as similes and metaphors.

They are often more dependent on the co-text, so Martin and White refer to this category of invocation as ‘flagged’. For example, if we say, ‘European settlers smashed the way of life of the Indigenous people’, this flags judgement of impropriety and in the example in Fig. 2, ‘wincing’ flags affect: insecurity. The ‘afford’ category of invocation occurs when there is no overt linguistic signaling of attitude, but the context suggests invoked attitude, as in the affording of the inference of fear in the example in Fig. 2.

Attitude in images in picture books, comics and animations is primarily communicated through characters’ facial expression, gesture and posture as well as through the use of colour and, intermodally, through the inclusion of ‘thought clouds’. While it is possible to communicate judgement in images through culturally acknowledged gestures such as clapping and, in some cultures, pointing the thumb up or down, or through visual metaphors, such as adding devil’s horns and tail to the usual portrayal of a character, judgement is more frequently invoked in images on the basis of the ideational meanings depicted, and may be confirmed by accompanying language.

Extensive research on the communication of affect through facial expression and through body language and gesture has derived from the seminal works of Ekman, Friesen, and Ellsworth (2013) and Kendon (2004) respectively, but our analysis draws on frameworks focused on the affordances of these semiotic modes in picture books and animations (Ngo et al., 2012; Ngo, 2018; Tian, 2011). In the cline of facial depiction from minimalist to generic representation of facial features in the comic maker software used in this study, affect is conveyed facially through combinations of head orientation, eyebrow positioning, the vertical and horizontal positioning of pupils in the eyes and the configuration of the mouth as straight, curved up or down and showing teeth or not.

While space does not permit a detailed account of the depiction options for each of these facial features, in general upward orientation is associated with positive affect and downward orientation with negative affect. For example, affect such as sadness and despondency can be inferred if the head is pointing downward, eyebrows straight, pupils horizontally central and vertically low and the mouth/lips line is curved downward with teeth not visible. Happiness can be indicated by the opposing depiction choices with head orientation level or slightly backward, eyebrows slightly raised, pupils horizontally central but vertically slightly raised and the mouth/lips line curved upwards. This positive affect can be graduated by the showing of teeth and intensified further with the visibility of teeth and the mouth open. Eyebrows pointing down towards the nose can be an indicator of insecurity or dissatisfaction depending on the mouth configuration as curved downward or as straight with teeth visible.

The facial communication of affect is frequently complemented by gesture and posture and there is a growing systemic functional semiotic literature on the portrayal of meanings through these modes (Hood, 2011; Martinec, 2004; Ngo, 2018). However, in the comic maker software used in this study the options are limited to the position of the arms and the body posture as erect or ‘slumped’ forward. Where the arms involve ‘hands on hips’ this communicates assertion and, in general, the extended arms with palms upward indicate openness or engagement of the character with the interlocutor, while arms by the sides align with disengagement and facial expressions of despondency.

Colour as a resource for creating an emotional mood or atmosphere in picture books has been described in the system of ‘ambience’ by Painter, Martin, and Unsworth (2013, p. 35). The main parameters here are ‘vibrancy’, ‘warmth’ and ‘familiarity’. Positive emotional moods are associated with vibrant, highly saturated, bright colours that are warm (such as red, orange and yellow hues) and familiar in that the colours are highly differentiated. Negative emotional moods are generally associated with the alternative options involving cool colours (such as blue – green hues). The extent to which the attitudinal meanings conveyed by language and the visual semiotic systems discussed above are aligned is referred to by Painter et al. (2013, p. 144) as ‘resonance.’

### 3. Methodology

#### 3.1. Participants

The participants in the part of the Australian Research Council funded study (Mills, Unsworth, & Barton, 2019) reported here were two classes of year five students (ages 9–11 years) and their teachers from two elementary schools located in one of the most socially disadvantaged Statistical Local Areas of the Greater Brisbane area (Australian Bureau of Statistics, 2013). A significant proportion of the school populations were from families with language backgrounds other than English, 24 % of whom speak a language other than English at home. The main languages spoken included Maori, Samoan and Cambodian. EAL students comprised just over 20 % of the students in regular classrooms.

While no formal assessment of the English language competence was available for the EAL students integrated into the year five classes in this study, informal observation suggests that they are in the ‘developing’ phase of English language learning on the scale of ‘beginning – emerging – developing – consolidating’ as formulated by the *Australian Curriculum, Assessment and Reporting Authority (ACARA)* (2014). The ‘developing’ phase in speaking is partly characterized by using a small range of English language features while relying on others to restate or suggest vocabulary or sentence structure. In reading this phase is characterized by understanding independently the gist of most class texts with predictable structures and familiar vocabulary, and in writing at this phase students can produce basic versions of most class text types but not at the expected level of achievement of the grade level. The English language and literacy competence of the EAL students at the ‘developing’ phase of English language learning is not dissimilar from that of the great majority of students from an English language background in the socio-economically and educationally disadvantaged schools in this project. Limited repertoires of resources for expressing attitudinal meaning were an issue common to both the ‘developing’ phase EAL learners and many of the monolingual speakers of English.

#### 3.2. Teacher professional development

Prior to the classroom intervention, the attitude network was taught to the teachers in the study through a series of after school professional development workshops. The authors, as principal researchers on the project, then met with the teachers to collaboratively plan units of classroom work on multimodal authoring. This authoring incorporated the attitude network as a basis for developing pedagogic practice to extend the students’ capacities to interpret and deploy evaluative language, and to interpret and create evaluative meaning through body language and through filmic, photographic, and animation techniques. To prepare the students for the new learning experiences in multimodal authoring, and to support the teachers in incorporating this into their pedagogic practice, a professional media artist taught a series of six, two-hour lessons to each class over one school term or quarter. The teachers were participant observers in the lessons taught by the media artist and they then consolidated, elaborated, and extended those learning experiences into the other English curriculum sessions each week. The teachers wanted to strengthen their understanding of the appraisal framework and its pedagogic application, so they studied a book called *Grammar and Meaning* (Humphrey et al., 2012), which introduces teachers to the use of the Martin and White (2005) appraisal framework with elementary school students.

#### 3.3. Classroom intervention

The series of six lessons taught by the media artist and followed up by the class teachers sought to enable the students to:

- i) Develop a repertoire of language and image resources for expressing affect, judgement and appreciation;
- ii) Become familiar with and use a metalanguage to describe the different domains of affect, judgement and appreciation;
- iii) Use the resources of language and image to create a multimodal narrative incorporating affect, judgement, and appreciation in digitally-produced comics.

Core to the design of this program was the modelling and production of texts that communicate affect, judgement, and appreciation across multiple modes. In the first lesson, at the request of the classroom teachers, the students completed a fifteen-item short answer exercise from Humphrey et al. (2012) to serve as a pre-test (Fig. 3). This is a formative assessment task considered appropriate for all students participating in regular classroom work in English, including EAL students. The task consists of sentences drawn from a text about the Harry Potter stories by J.K. Rowling and required the students to categorize evaluative expressions as indicating affect, judgement, or appreciation. At the conclusion of the unit of work the teachers administered the same assessment task as a post-test.

From the outset, the students were introduced to the language of positive and negative affect, and differing intensities of affect, with accompanying facial expressions, body language, and interpersonal positioning in literature, film, drama, emoticons, and other animated formats.

Collaborative teacher-student examination and creation of still and moving images represented the affect of others in live action and animated formats. Image creation techniques included the use of different visual perspectives and colour, as well as the incorporation of sound and music, to evoke affect meaning in paper and digital media texts (e.g., drawing lines evoked by the mood of various classical music segments). In this way, the students were also able to learn about the potential convergence and complementarity of evaluative meaning across modes.

Use three different coloured highlighters to identify the explicit attitudes that are italicised in the extracts. Write the type of attitude in the space provided and add '+ve' or '-ve' to indicate whether positive or negative evaluation is used.

- Use pink to mark words and expressions which tell us the feelings of the writer or characters (affect).
- Use blue to mark words and expressions which judge the behaviour or personality of the author or characters (judgement).
- Use green to mark words and expressions which evaluate the qualities of things (appreciation).

	Extracts from Text 4.9	Type of attitude
Example	It made me really <i>sad</i> (pink) to feel that it is over now	-ve affect
1	Jamie and Adam were <i>disappointed</i> with the movie	
2	but I <i>loved</i> it.	
3	The action sequences are really <i>gruesome</i>	
4	And of course it was <i>tragic</i> when X died	
5	But even though it was a bit on the <i>intense</i> side,	
6	Ron finally learns to <i>trust</i>	
7	Neville becomes a real <i>hero</i> .	
8	I heard some academic say that the characters are <i>one-dimensional</i>	
9	I know some people on this forum have said that Harry Potter is too <i>simplistic</i> ,	
10	I thought the way Snape's true character was revealed was <i>brilliant</i> .	
11	There are quite <i>complex</i> and <i>relevant</i> themes	
12	like how <i>ordinary</i> people can become <i>powerful</i>	
13	on the whole I think JK is a <i>great</i> writer	
14	Wouldn't it be <i>amazing</i> to have a new series built around their kids?	
15	I'm sure I'll <i>enjoy</i> rereading the books	

Fig. 3. Pre- and post-test (adapted from Humphrey et al. [2012] and used with permission).

In the second lesson, the language of judgement was introduced to the students by the media artist who performed charades of different imagined characters whose behaviours showed contrasting positive and negative qualities. For example, a character returned a lost wallet to a friend, while another kept the wallet. Another scenario showed a boring conversationalist compared to a highly interesting one, and a character skydiving fearfully versus fearlessly. The class supplied judgement words to describe the behaviours. Next, the media artist discussed familiar superheroes from popular texts, scribing a list of words offered by the students to judge the superhero's attributes.

The three types of judgement were explained with examples from superheroes, and the final lists of positive and negative descriptors were compared. The teacher then showed the students a judgement word wall or list of vocabulary for high visibility. After this the teacher nominated students to perform impromptu charades to enact scenarios that evoked positive and negative judgements of behaviours (e.g., rescuing a lost rabbit, eating all the slices of pizza, keeping a soccer ball in the air/dropping it). The class wrote down core and non-core judgement words relevant to the behaviour of the acted characters. The students then viewed and analysed the short animation 'Puppy' from Hotel Transylvania by Sony Pictures, showing how judgements changed between the boy and the puppy. They watched 'Riley's First Date' to discuss judgements of characters, with students taking notes on a worksheet. Students assessed sentences about characters on the interactive whiteboard, supplying associated judgement words. Following this the class co-constructed sentences on the board, showing a character behaving a certain way (e.g., brave, sneaky, mean), with students contributing ideas for the character behaviours and associated words. Subsequently students independently wrote their own brief character descriptions to illustrate an attribute from a word bank.

During the third lesson, the students consolidated what they learned by using judgement vocabulary to describe the characters in video compilations, such as soccer players displaying good and poor sportsmanship. Then they read about an ethical dilemma and added their own judgement words to describe a course of action. The concept of appreciation was introduced using photos of 'toys of disappointment' to teach vocabulary about the expectation, worth, and value of nonhuman things. An appreciation word wall was

created using a combination of teacher and student generated vocabulary. Similar activities were later completed in written form, evaluating images of artworks, books, and other inanimate objects, with students sharing their appreciation words. The students sketched and described memories, experiences, places, days, and objects that they appreciate positively or negatively. They viewed the 'Kyary Pamyu Pamyu' (Sai and Co) and Piper Animated Movie clips, pausing at key points to draw attention to describe elements of the clip, such as the quality of the animations, music, realism, character development, and plot using appreciative language, and recording their responses in written form.

Lesson four taught students how to use the comic creator software *Comics Head* for iPad. This enabled students to select comic layouts, choose settings and characters and select from a variety of facial expressions, gestures and postures in which the characters were depicted. They were able to use thought clouds to include characters' inner worlds of emotion, judgement, and appreciation and speech bubbles for characters' direct expression of attitude through dialogue as well as indirect expression through inserted narration panels. Prior to the lesson, the teachers had worked with students to create their own moral dilemma story. An example was a character finding unowned cash in a teller machine. The students had also prepared the dialogue and character thought bubble content for their comic using pencil and paper, prior to being introduced to the comic creation software. In this lesson, students were shown a model of a comic created by the media artist using the iPad application. They were given a live tutorial (instead of a 'how to' video), with the media artist showing each step in the comic creation process, displayed by connecting the iPad to the large interactive whiteboard. The students were taught how to generate a new comic, add backgrounds, characters, speech bubbles, and extra pages, as well as how to save and edit their comics. Students were each given an iPad to begin to create their comics for 20 min, supported by the media artist, teachers, and more capable peers when they needed help. After the students were given time to apply the instruction, a new set of affordances of the technology was introduced, followed by time to enact the knowledge with support.

Lessons five and six involved longer blocks of time for the students to create and edit their digital comics with facilitator support. The teachers provided the students with reminders about using their affect, judgement, and appreciation words, and editing advice on writing conventions. When completed, the students shared their comics with the class via the iPads connected to the large screen display.

#### 4. A model for learning experiences to expand repertoires of evaluative expression

From the design and implementation of the lesson sequence, a model for expanding students' multimodal repertoires of evaluative expression was generated (Fig. 4). This model emphasizes firstly, the importance of progressive learning phrases of receptive and productive meaning-making that EAL students as well as many of their peers need to experience in expanding their understanding and use of the resources of English and complementary modes for communicating attitudinal meaning. Secondly, the model emphasizes the interaction of learning experiences in reception and production. Along with this, the model indicates the role of the integrated development of metalanguage for describing attitudinal resources, and the significance of the iterative nature of this cycle of learning in expanding students' repertoires for evaluative meaning-making.

The trajectory of student learning progressed from developing an enhanced *awareness* of nuanced forms of language expressing affect, judgement, or appreciation, and the communication of different kinds of feelings and opinions with greater and lesser degrees of intensification across different modes. This phase of *awareness* of new language forms occurred as the media artist enacted contexts for attitudinal expression, and through a combination of elicitation and introduction, demonstrated the contextually apposite use of unfamiliar language. In lesson two, for example, the initial enacting of charades introduced expressions such as *reprehensible*, *culpable*, *exemplary* and *commendable*.

The next phase in student learning was the *recognition* of an increased range of nuanced expressions and their classification within the attitude network. In this phase, although new expressions such as *reprehensible* etc were not firmly established in the students' receptive vocabularies, using resources such as the 'word walls' constructed for judgement in lesson two, and for appreciation in lesson three, students were able to recall prior classroom experience to assist them to recognize the contextually appropriate meanings of these expressions as they appeared in new learning situations.

As the program proceeded, the teachers consolidated the concepts introduced by the media artist, leading to the students' *familiarization* with broadened repertoires of language and multimodal resources. With this gradual familiarization students' receptive

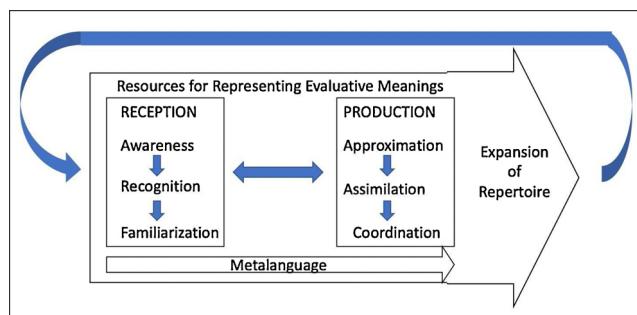


Fig. 4. Multimodal Expansion of Evaluative Expression (M3E) cycle.

knowledge of previously unfamiliar evaluative expressions was becoming more established. Hence, they were able to participate in activities such as discussions about examples of judgement and appreciation in relation to the movie clips examined by the class in lessons two and three.

While the foregoing indicates a progression in receptive interpretation, from the beginning, the students also participated in related multimodal production of various kinds, as evidenced in the lesson summary above. Their responses included examples of *approximation* and *assimilation*, where the teaching had enabled the students to gradually incorporate these resources confidently into their semiotic repertoires. In approximation, the students' use of evaluative language is not yet precisely apposite. For example, a student may describe a school report card as 'tremendous' rather than more appositely as 'outstanding' or 'excellent'. Examples of assimilation show students' appropriate uses of evaluative expressions. In their multimodal text creations, the students were also working on the *coordination* of the communication of evaluative meanings through language and the meaning making resources of images. For example, if the language indicated sadness, the image of the character could show the corners of the mouth curving downward, eyes looking down, head titled forward and arms slumped to the character's sides.

While there is a learning progression through the receptive phases of *awareness*, *recognition* and *familiarization*, and through the productive phases of *approximation*, *assimilation* and *coordination*, reception and production were always developed interactively in the program. The lessons in the program consisted of iterative cycles of learning experiences of reception and production simultaneously introducing the relevant metalanguage.

#### 4.1. Data collection and analysis

Pre-test and post-test data from the task described in the Classroom Intervention section in lesson one were collected from all students present at the time on testing. Following completion of the curriculum unit of work over one school term, the students' moral dilemma comic narratives were collected in pdf formats. In the overall Australian Research Council project student interviews were conducted in pairs with a subsample of 26 students selected from across three schools, including equal numbers of males and females, and reflecting the cultural diversity of the schools. Students were interviewed in pairs, partly to minimize student discomfort, but also because restricted times for student withdrawal from class meant that interviewing in pairs facilitated management of data collection in the time available. Teachers were careful not to select children who would be highly anxious about participating in the interview, and sampled students who had created higher, average, and lower quality work. Each interview was audio-recorded during the last week of the unit of work.

The two year five classes whose work is reported in this paper each consisted of 22–24 students including EAL students consistent with the overall proportion of the school population of about 20 %. Two EAL students, one boy (Ozak) and one girl (Padma), and two English as L1 (EL1) students, one boy (Aleni) and one girl (Gina), were selected for close analysis of their interview responses and their comic moral dilemma stories. All students were assigned pseudonyms. The families of both EAL students, Ozak and Padma, are Samoan, and the language used at home is sometimes Samoan and sometimes English. Neither student receives any additional English teaching beyond that of the regular classroom, and both appear to be in the 'developing' phase of English language learning ([Australian Curriculum, Assessment & Reporting Authority \(ACARA\), 2014](#)).

The transcribed interview data were used to determine students' capacity to generate verbalized expressions to communicate judgement of characters and appreciation of nonhuman phenomena. The data were also used to determine how the students communicated judgement through images in their moral dilemma comic narratives. The interview data were also an opportunity to observe the students' understanding and use of metalanguage describing different types and subtypes of attitudinal meanings—*affect*, judgements of people, and appreciation of things. Example interview questions included: What kinds of judgements can we make about characters in our stories, animations or cartoons?; What are three words to show someone is tenacious or how hard they stick at something?; When you created this comic, what facial expressions did you choose for the characters? Why?

The M3E cycle ([Fig. 3](#)) emphasizes cumulative learning through a variety of multimodal learning tasks as foundational to the development of students' repertoires for attitudinal expression. However, here we deal only with the pre- and post-tests; the four selected students' moral dilemma comic narratives; and our interviews with these four students. Our purposes focus on illustrating the efficacy of the M3E pedagogic approach to: i) develop students' understanding of broadened categories of attitudinal meaning and usage, ii) advance students' capacity to appropriately incorporate attitudinal meaning into their multimodal text creation, and iii) enable teachers to constructively map differing degrees of capacity to communicate attitudinal meaning in multimodal authoring.

We first present the results of the pre- and post-tests for the students from each class who undertook the tests. We then focus on the moral dilemma comic narratives and the interview data from the four selected students. This focus contrasts Ozak (EAL) and Gina (EL1), whose work showed substantial development of an extended repertoire of resources for expressing attitude and graduation with Padma (EAL) and Aleni (EL1), whose work showed quite limited development. Comparing EL1 and EAL students' capacity to use evaluative meanings optimizes the applicability of the findings for contemporary classrooms that are increasingly characterized by linguistic diversity. While the emphasis is on the development of the students' repertoires of language for expressing attitude and graduation, we first briefly illustrate student uses of image resources for this purpose. We then examine the extent and nature of the evaluative language used by the students in their moral dilemma narratives and relate this to the interview responses.

**Table 1**

Pre- and post-test results for two classes.

No	Class 5GB			Class 5NB		
	Pseudonym	PRETEST Score	POSTTEST Score	Pseudonym	PRETEST Score	POSTTEST Score
1	Asha	0	15	Nikita	3	15
2	Tina	4	14	Seanna	4	15
3	Anjo	5	13	Saneo	1	15
4	Riley	3	14	Damon	2	14
5	Bebe	4	11	Earl	6	15
6	Harmon	6	14	Cole	0	11
7	Deita	5	11	Dahne	6	13
8	Anny	5	13	Jardine	3	14
9	Ishma	4	13	Roela	4	15
10	Calam	6	10	Ezera	6	11
11	Izram	3	11	Tara	5	15
12	Joe	1	12	Ocana	3	12
13	Gina	8	15	Sapula	5	14
14	Salman	3	15	Padma	6	15
15	May	2	15	Ngoti	2	13
16	Seppe	4	9	Ozak	NA	15
17	Hal	5	12			
18	Cohen	0	10			
19	Aleni	NA	14			
	MEAN SCORE	3.8	12.6	MEAN SCORE	3.7	13.8

## 5. Results

### 5.1. Development of linguistic repertoires for nuanced expressions of evaluative meanings

The student scores on the pre- and post-tests are shown in Table 1. The low pre-test scores indicated the students' very limited initial understanding of the different types of attitudinal expression and also their limited understanding of the particular expressions targeted in the test. Of the possible score of 15, only one of the 33 students who took the pre-test scored 8, six students scored 6 and the remainder had lower scores. The vastly improved post-test scores, with twelve students achieving the maximum score (seven scoring 14, five scoring 12, and the lowest scoring 9), clearly indicate that the students were able to learn to differentiate expressions of affect, judgement, and appreciation. The test included some key non-core words, such as 'intense' and 'one-dimensional'. This combined with the fact that more than two thirds of the students achieved the maximum score, or very close to it, suggests that many students may have also expanded their receptive repertoires of attitudinal expression.

Ozak and Padma obtained the maximum score on the post-test, whereas on the pre-test Padma had scored only six.

Both EAL students, Ozak and Padma, and one of the EL1 students, Gina, obtained the maximum score of 15 on the post-test, and the other EL1 student, Aleni, scored 14. Ozak and Aleni were absent for the pre-test. Gina's pre-test score of eight was marginally higher than that of Padma who scored six. The closeness of these scores may reflect the limited language and literacy development of the EL1 students in the low socio-economic and educationally disadvantaged contexts of the school population. The common maximum or close to maximum scores of the EAL and EL1 students on the post-tests suggest the teaching enabled the EAL students to achieve comparably with the EL1 students, and that all students were enabled to demonstrate highly effective learning.

### 5.2. Capacity to interpret and create visual and linguistic representations of evaluative meanings

The moral dilemma narratives will first be examined in relation to the students' deployment of image resources for communicating attitude. Within the Comics Head application, the affordances available to the students for this purpose include selection from a bank of facial expressions, gestures (hand positions), posture (arms by side, hands on hips, trunk straight or slumped etc.), front or side view, and positioning to indicate social distance (enlarging or minimizing figures for close-up, mid-shot or long-shot) and the use of colour, such as a red face indicating anger. Some students also used 'thought clouds' containing images of characters to indicate or intensify the expression of the thinkers' attitude to the character(s) depicted. The moral dilemma narratives discussed here are from the EAL students, Ozak and Padma and the EL1 students Gina and Aleni. The more accomplished narratives are those by Ozak, which can be viewed at <http://tiny.cc/fvjv1y> and by Gina, which can be viewed at <http://tiny.cc/88jv1y>.

Gina's narrative depicts the interaction of the character Noah and a female confidant. For both characters Gina manipulates facial expression, gesture, posture and frontal or side view, matching these image depictions to the meanings communicated in the dialogue and narration. The authors' skill in this is evident throughout the story and is well exemplified in the first panel after the interpolated title page (Fig. 5).

The depiction of Noah's mouth and eyes, his head tilted down to the left, and his arms slumped by his sides align the visual communication of his downcast mood with the verbal expression of his potential self-judgement of impropriety and feeling of future

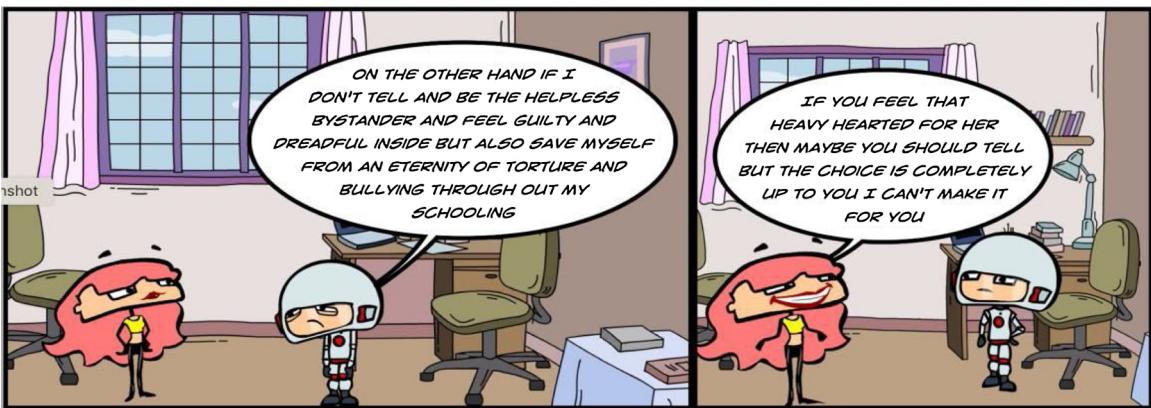


Fig. 5. Noah's dilemma.

extreme insecurity. The second frame shows the confidant proffering a solution accompanied by an optimistic wide smile and open arm gesture, and the boy now depicted with a neutral facial expression, chin tilted upwards, and one hand on his hip, appearing to consider the advice.

Ozak's narrative predominantly shows the one character, but similarly demonstrates effective manipulation of facial expression and posture throughout, matching the visually depicted feelings to the attitudes expressed through written language. In addition, Ozak made use of close up images and thought clouds with images visually conveying the boy's feeling and making use of colour to do so (see <http://tiny.cc/fvjv1y>). The somewhat less accomplished moral dilemma by Padma was verbally more constrained, evidenced by the absence of any non-core expressions. Visually, it adopted a much more melodramatic representation style, as shown in Fig. 6.

Nevertheless, the visual representation of the character's feelings aligns with the attitudinal expression in the words in both frames of Fig. 6. This seems to be more subtly astute in the final frame shown in Fig. 7, where the facial expression suggestively evokes a judgement of impropriety in the character's deliberation, which is borne out in the final frame of the story.

In his work, Aleni has adopted a minimalist depiction style and his unfinished two panel, four frame story shows limited verbal and visual development (Fig. 8). However, the bewilderment on the face of the character in the first frame is appropriate to the storyline, in addition to the downcast facial expression in frame two, which aligns with the inferred unhappiness and potential self-judgement of impropriety.

Within this group of four students, facility in the deployment of image resources did not seem to align with the EAL/EL1 grouping. Although all students used image resources appropriately, Ozak (EAL) used a greater variety of such resources, including colour to represent affect, thought clouds containing images and close-up views of the characters, as well as a variety of facial expression and gesture and posture. Gina (EL1) used a variety of facial expression, gesture and posture, and although Padma (EAL) chose a more melodramatic style, she used the same resources as Gina with comparable effectiveness. The short, unfinished work of Aleni (EL1) suggested a similar range of resources as Gina and Padma.

In terms of the M3E model, Gina and Ozak have assimilated a wider range of image resources for depicting evaluative meaning, with Gina articulating these in the interaction of two characters. Both students have coordinated these image resources very effectively with the attitudinal meanings communicated in the dialogue and narration. Padma and Aleni have also appropriately



Fig. 6. Padma's melodramatic style.



Fig. 7. Evoking judgement: Impropriety.

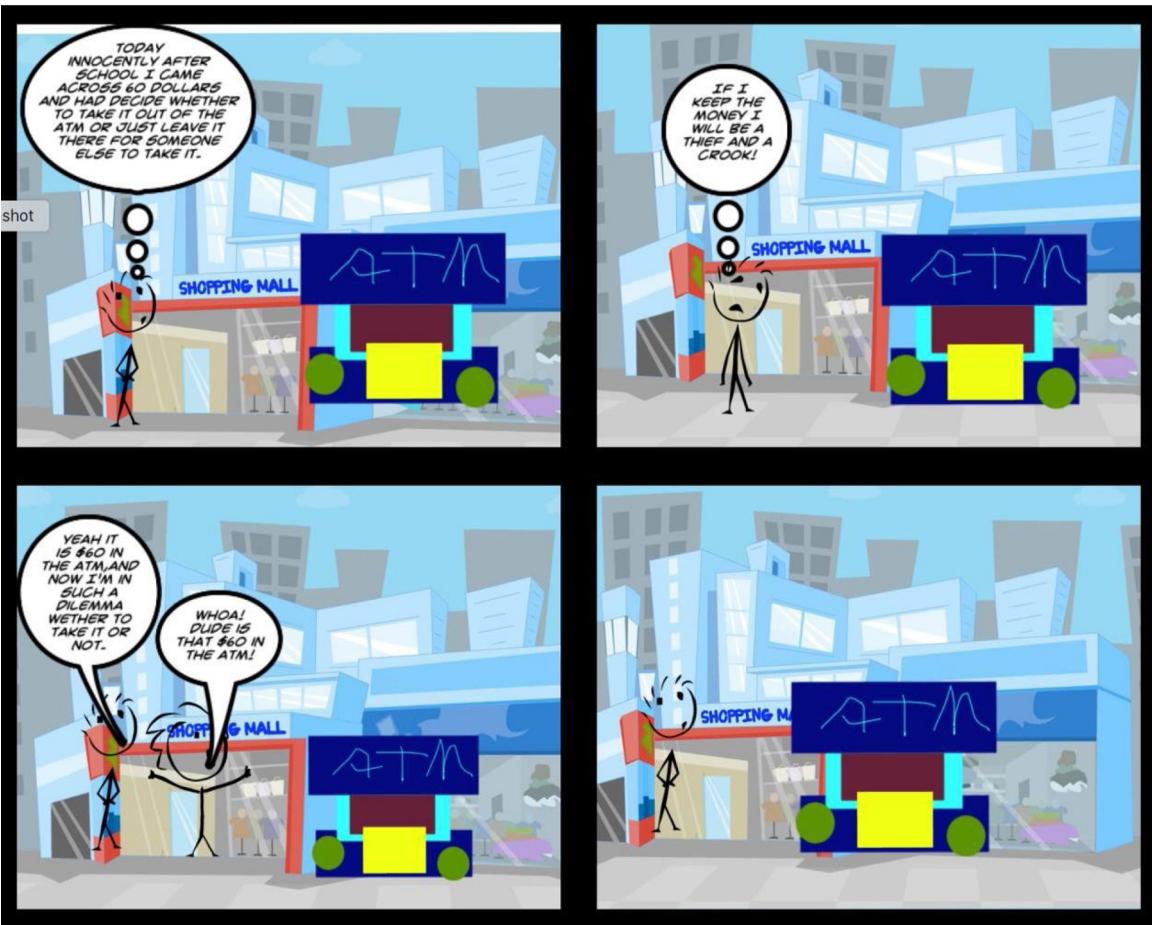


Fig. 8. Aleni's minimalist depiction style.

coordinated their use of image and language resources for conveying attitudinal meaning. Padma seems to be approaching assimilation but does not deploy the range of resources utilized by Gina and Ozak. The more limited application by Aleni suggests exploratory approximation in the depiction of evaluative meaning through images.

The evaluative language in the moral dilemma narratives was analysed by coding each expression of attitude according to the Martin and White (2005) framework: Affect—happiness (HAP), satisfaction (SAT), security (SEC); Judgement: esteem—capacity (CAP), normality (NOR), tenacity (TEN); Judgement: ethics—veracity (VER), propriety (PRO); Appreciation (APP). Graduation is

**Table 2**

Distribution of types of attitude and graduation in a sample of moral dilemma comics.

ATTITUDE										GRADUATION				
	INVOKED	INSCRIBED	Affect			Judgement: Esteem			Judgement: Ethics		Appreciation	Infused	Isolated	
			HAP	SAT	SEC	CAP	NOR	TEN	VER	PRO				
Gina	12	32	5	5	2	2	0	1	0	29	1	5	0	2
Ozak	9	15	1	8	1	2	1	0	0	8	3	6	1	3
Padma	5	4	1	2	1	0	0	0	0	3	2	1	0	1
Aleni	3	4	0	1	1	0	0	0	0	5	0	0	0	1

coded as infused (non-core vocabulary) or isolated either using grammatical (e.g. very) or lexical items (e.g. *exquisitely* beautiful) or figurative expressions. The results for the four selected students are shown in Table 2.

Gina's narrative is clearly outstanding in the number of inscribed and invoked expressions of attitude, and both she and Ozak included many more such expressions than Padma and Aleni. While the dominant attitudinal theme of a moral dilemma concerns judgements of social sanction or propriety, both Gina and Ozak also included judgements of esteem with a substantial number of expressions of affect. In contrast, Padma and Aleni used few expressions of affect and no judgements of esteem. Both Gina and Ozak also made substantial use of graduation, especially by semantic infusion, whereas Padma and Aleni made limited use of graduation. Importantly, it is not only the quantity of expressions of attitude and graduation that distinguishes the work of Gina and Ozak, both of whom include substantial use of non-core vocabulary in their moral dilemma stories. Ozak uses non-core words like 'furious' rather than 'angry' and 'petrified' rather than 'scared' and Gina uses words like 'deplore' and 'virtuous', whereas no such examples are used by Padma and Aleni.

This non-core vocabulary also accounts for Gina and Ozak's distinctive use of semantic infusion to achieve graduation, where the intensification of meaning is infused into the choice of lexical item, such as 'furious' and 'petrified', rather than graduation through grammatical items, such as '*really* angry' or 'very scared'. Gina's text is further distinguished through her use of non- core words that are nominalizations, such as 'jubilation' and 'manipulation'. None of the other students used nominalizations to express attitude.

The difference in the use of evaluative language in multimodal authoring appears to be greater within the EL1 and EAL pairs than it is between the EL1 and EAL pairs. The two higher achievers are Gina (EL1) and Ozak (EAL). It is clear that Gina has produced the most extensive and grammatically sophisticated use of evaluative language of the four students.

While Ozak did not use evaluative resources to the same extent as Gina and did not use nominalized forms, his use of non-core words and figurative language was marginally greater than that of Gina, as shown in Table 2. There was little difference in the evaluative language use of the two lower achievers, Aleni (EL1) and Padma (EAL). Both of them made substantially less use than Gina and Ozak of evaluative language overall, and less use of graduation, non-core words and figurative language.

While Table 2 shows that Gina and Ozak were able to use a wider range of attitudinal expression in their narratives than Padma and Aleni, on the post-test results (Table 1), Gina, Ozak and Padma all scored the maximum 15 items correct, and Aleni scored 14. This indicates that while all students enhanced their receptive repertoires for interpreting various forms of attitudinal expression, not all students were able to deploy an enhanced repertoire in their multimodal authoring to the same extent as Gina and Ozak.

### 5.3. Metalanguage for complementary deployment of visual and linguistic resources

The student responses to the interview questions indicated only minor differences in the attitudinal expressions they were able to produce, but were suggestive of differences in their command of the metalanguage used to describe the various categories of attitudinal meaning. Gina and Padma were interviewed together, as were Ozak and Aleni. When the interviewer solicited words that could describe sub-categories of attitude, such as judgement (propriety) and appreciation (reaction), both Gina and Padma provided some less commonly used examples, as shown in the following excerpts from the interview transcript:

Facilitator: What are three words to show judgement of a bad character's morals?

Padma: Dishonest, probably greedy, and foe.

Gina: Devious, manipulative, and a thief.

Facilitator: Question number nine; what three words could you use that show that you like a new video game?

Padma: Like, ah, its outstanding, fabulous, awesome....

Facilitator: Great.

Gina: Thrilling, captivating, and dramatic.

Padma's response of 'foe' is not an entirely apposite expression of judgement of impropriety, and likewise her earlier response of 'powerful' is not the most apposite 'to show someone is tenacious or how hard they stick at something' as requested by the interviewer. But apart from these, the responses of both students were most appropriate, and included other less common expressions such as 'flawless' and 'mundane' (Padma) and 'diligent' and 'intriguing' (Gina).

The differences in interview responses between Ozak and Aleni were also minor, but discernible on some occasions, as indicated in the following excerpt from the transcript:

Facilitator: What are three words to show judgement of a bad character's morals?

Ozak: Manipulative, disrespectful and unreliable.

Facilitator: Nice.

Aleni: Thief, evil and horrid.

Aleni also responded with the less than apposite response of 'powerful' to the interviewer's prompt about tenacity, but apart from this his responses were appropriate and included less common expressions, such as 'flawless' and 'intriguing'. In this directly prompted production of attitudinal expression, Gina and Ozak showed marginally greater facility, and all four students were able to provide appropriate responses, including some less common expressions such as 'intriguing' and 'engaging' by Aleni, and 'intense' and 'appealing' by Padma.

When given the opportunity in the interviews to refer to the metalanguage describing the categories of the attitude network, it was Gina and Ozak who, in their respective sessions, were immediately forthcoming. This was the case in the opening question in the interview with Gina and Padma:

Facilitator: Okay girls, first question, what kind of judgements can we make about characters in our stories, animations, or cartoons?

Gina: Negative and positive about their behaviour, and if they're doing a moral thing or an immoral thing, or a capable or social thing.

At the end of the interview with Ozak and Aleni they were asked if they had anything further to add. Aleni wanted to say how much he enjoyed using the Comics Head app:

Facilitator:...Is there anything else you want to tell me?

Aleni: Yeah, I had a fun experience with the app.

Facilitator: That's good.

Aleni: It was really good. The app was called Comics Head...

Facilitator: Yeah, Comics Head.

Aleni: And yeah, I think we should do it in future.

Ozak concurred, but then made direct reference to the metalanguage of the systems of attitudinal meaning expression they had learned:

Facilitator: What did you think Ozak?

Ozak: It was very nice using this app creating our own characters and using different expressions to show them how they feel, and affect, judgement, and appreciation.

The results indicated that all students extended their receptive understanding of non-core expressions of attitudinal meaning and the metalanguage used to classify these expressions. The pre- and post-tests showed substantial growth in the students' recognition of attitudinal meanings, including some non-core expressions, and their understanding of how to classify these meanings as relating to affect, judgement and appreciation. The post-test scores showed very little differentiation among the students.

In their productive use of evaluative language, the interview data from the four students indicated that all could provide expressions appropriate to the categories of judgement and appreciation probed by the interview questions. Consistent with their post-test results, in the interviews, there was only minor differentiation in the responses by Gina and Ozak compared with those of Aleni and Padma. However, the differentiation in productive capacity was quite marked in the moral dilemma narratives with Gina and Ozak showing examples of approximation and some assimilation in their use of sophisticated expressions, but no such non-core expressions occurring in the stories of Padma and Aleni. Gina and Ozak also included a greater variety of types of attitude and of graduation. This greater range and sophistication were also reflected in their use of image resources for conveying attitude. Not only was the productive use of image and language resources by Gina and Ozak more advanced than that by Padma and Aleni, but it was Gina and Ozak only who initiated the use of metalanguage in their interview responses.

## 6. Discussion

The four student cases showed variation in the development of productive repertoires for expressing affect, judgement, and appreciation through both language and image. However, for all students, both the extension of their receptive repertoires and recognition of the metalanguage for describing these different dimensions of attitude, were clearly evident. The interconnectedness of language with other modes of expressing attitudinal meaning was not only highly engaging for the students, but it also provided personal and vicarious bodily contextualization of the previously unfamiliar language. This interconnectedness strengthened the students' learning through the convergence of similar meanings in different modes, as well as their understanding of how the juxtaposition of divergent meanings in different modes multiply meaning multimodally (Lemke, 1998). Some students were able to deploy this kind of multimodal affordance in their moral dilemma narratives. For example, in the conclusion of her moral dilemma, Gina's image depicts Noah's affect as downcast and disappointed with his downturned mouth, eyes pointing down and arms slumped by his sides, while the speech bubble conveys negative and positive judgements of propriety in the positive outcome of the bullying episode (Fig. 9).

The students were extending their repertoires of attitudinal expression through their awareness of the different categories and

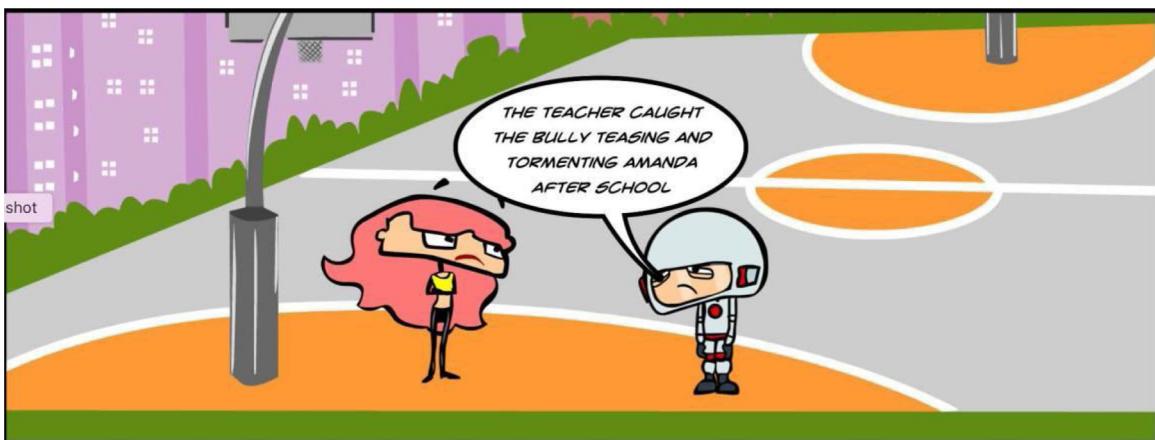


Fig. 9. Multimodal complementarity of attitudinal meaning.

sub-categories of attitude, and they were also expressing those attitudinal meanings through a variety of forms of language. In their multimodal authoring, some students like Gina and Ozak were assimilating a considerable amount of non-core vocabulary that graduated the attitudinal meaning through semantic infusion. They were also using some figurative language, such as 'heavy hearted' (Gina) and 'this darkness filling my head' (Ozak), as well as invoking attitudinal meaning through expressions such as Ozak's use of 'I couldn't believe it' and 'I had walked to school as if there was no problem'. It seems that the theoretical knowledge informing the pedagogy was important in developing both the extent and the variety of expression in the students' texts. The teachers went beyond the introduction to the appraisal framework provided by the research team, to a detailed personal study of the pedagogic application of the framework in the book by Humphrey et al. (2012). In a follow-up interview one of the teachers recalled: Well, from the beginning, what I remember is that we really didn't have an understanding. We were trying to understand it ourselves. So that's when we got that *Grammar and Meaning* book.

In fact, the school purchased eight copies of the book so that it was available to the teaching teams from years three to six. The confidence of the teachers in their theoretical knowledge of the appraisal framework was reflected by the second teacher in the same interview who indicated that, 'myself as a teacher, I'm more *au fait* with what is the language of evaluation.'

The productive effect of the teachers' theoretical knowledge on the student learning is consistent with research in teaching English as a first language, which indicated that the quality of writing by year eight students in the United Kingdom (UK) was positively impacted by the explicit teaching of 'contextualized' grammar and quality of the teachers' grammatical knowledge (Jones, Myhill, & Bailey, 2013). Further studies showed the value of metalinguistic talk in improving the writing of 10–11 year old children in the UK and reinforced the role that teachers' grammatical knowledge plays in enabling or constraining metalinguistic talk (Myhill, Jones, & Wilson, 2016). In a study that trained US elementary school English language teachers in the use of Martin and White's (2005) appraisal framework, the teachers' explicit teaching of appraisal resources to ESL students impacted positively on the students' ability to detect authors' infusion of attitudinal meaning in information texts and on their argumentative writing performance (O'Hallaron & Schleppegrell, 2016; O'Hallaron, Palincsar, & Schleppegrell, 2015). In a follow-up interview the teachers in our study recalled students' use of the metalanguage of the attitude network in discussing their design of the moral dilemma comic narratives:

... we were doing cartoons on the ethical dilemma and we're saying, well, what's wrong with that? They're saying, 'Oh, it needs more judgement, or it needs more language of affect.'

The teachers also indicated how they infused appraisal into other aspects of their English teaching:

Oh, we were looking at *The Lorax*. The kids had to do a book review. So, they had to analyse the character and the setting and the plot. We tried to infuse the appraisal framework into that as well.

This research is confirmed by other studies in which teacher knowledge and instruction in contextualized grammar had more positive outcomes for the more able writers (Jones et al., 2013; Myhill et al., 2016). In the work of our four case study students the use of evaluative language was far more advanced in the comic narratives and somewhat more advanced in the interview responses of Gina and Ozak than was the case for Padma and Aleni. Also, it was Gina and Ozak who readily used the metalanguage of the attitude network in their interview responses. However, the post-test results in our study showed that all students improved significantly in their knowledge of the metalanguage of attitudinal meaning. Similarly, all students were able to provide examples of different categories of attitudinal expression, as evidenced in the paired student interviews from each class. Both Ozak and Padma were from Samoan language background and both appeared to be at the 'developing' phase of English language learning. Their post-test scores were similar, and their interview responses were not markedly different from each other. Ozak's moral dilemma was a longer and more elaborated narrative and his use of image resources to communicate evaluative meaning was more extensive – and he readily used the metalanguage in the interview, while Padma did not. A similar contrast distinguishes the responses of Gina and Aleni. While both Ozak and Gina produced high quality outcomes, a characteristic distinguishing feature of Gina as an EL1 student was her use of

nominalization in evaluative expressions. There was little appreciable difference in the outcomes for Padma and Aleni, notwithstanding their different language backgrounds. Similar to the research by [Myhill and colleagues \(2016\)](#), our research showed no significant association between contextualized grammar teaching and the quality of the texts created by less able writers.

This is consistent with the results of an Australian study in which students in years four, six, eight and ten were taught contextualized systemic functional grammar and some aspects of a grammar of image design. The students' subsequent written interpretations of multimodal literary texts showed limited application and no inclusion of the metalanguage of the visual and verbal grammatical systems they had worked on intensively in their classroom programs ([Unsworth & Macken-Horarik, 2015](#)). However, in interviews the students made extensive use of the metalanguage of image design, explaining how features such as focalization and 'contact' images functioned in the interpretation of text segments. In the same study, [Macken-Horarik \(2016\)](#) illustrated some improvement and use of metalanguage in the written interpretation of multimodal texts by lower achieving year seven students who were taught contextualized systemic functional grammar and some aspects of a grammar of image design.

The convergence of the results from the present study and this related research indicates that the quality and confidence of teachers' knowledge of the semiotic theory informing their pedagogy and the appropriate contextualized mediation to students of the knowledge about language and image deriving from this through the relevant metalanguage, can benefit all students. For some students, although evidence of development in their paper and digital media text creation may be limited and take longer to emerge, the efficacy of the role of a metalanguage shared between students and teachers may be seen in their knowledge exhibited in their receptive literacy practices, and in their talk about texts.

The M3E model ([Fig. 3](#)) recognizes that expanding students' repertoires for the multimodal expression of attitudinal meaning entails their cycling through receptive phases of awareness and recognition of, and familiarization with, the language, image, and other semiotic resources. Importantly, this occurred in interaction with the production phases of approximation, assimilation, and coordination of the use of those resources in text creation. The model entails building a metalanguage to articulate appraisal resources, along with the expansion of students' semiotic resources for communication. In this way the metalanguage can be seen as an accelerant, so that the students' growing knowledge about meaning making systems enables them to further explore through the processes of approximation, assimilation, and coordination, the use of attitudinal resources that are novel to them. Future research needs to address the pedagogic challenges of providing the differentiated learning experience needed by students like Padma and Aleni, so that their understanding and use of more varied and elaborated expressions of attitudinal meaning are further extended in their multimodal text creation.

## 7. Conclusion

This research is significant, in part, because there is a need for EAL writing research to attend to the often-ignored development of students' language of attitudinal meanings—*affect, judgement, and appreciation*—central to the interpersonal language system of English.

However, perhaps even more importantly, for over a century, theorists have pointed to the vital set of relationships between language and other forms of communication that extend beyond the use of words ([Scollon & Scollon, 2013](#)). All meaning-making is arguably multimodal ([New London Group, 2000](#)). This research has demonstrated an enactment of a pedagogical approach to teaching attitudinal language that applied verbal, visual, gestural, and other modes of communication in popular texts and dramatizations to extend students' repertoires of communication. In addition, this account illustrates teacher commitment to gaining high levels of knowledge of the linguistic basis of attitudinal language combined with attention to broadened understandings of other communicative modes. The teachers similarly were committed to implementing this multimodal composing pedagogy through new digital authoring software on tablets—all of which was new to teachers and students.

For several decades, there have been calls for the development, teaching, and integration of multimodal metalanguages for designing text in the curriculum (see, for example [Mills, 2009](#); [New London Group, 1996](#); [Prain, 1997](#)). This project explored with teachers and students a metalanguage that aligns with the key objective of the multiliteracies initiative 'to develop an educationally accessible functional grammar; that is, a metalanguage that describes meaning in various realms' and that does not make 'unrealistic demands on teacher or learner knowledge' ([New London Group, 2000](#), p. 24). It also supported students in critical analyses and creation of evaluative meaning in their engagement with multimodal discourses in paper and digital media. To be used in the English language curriculum, a multimodal metalanguage needs to equip authors to gain conscious control of their written composition across languages, modes, and media ([Smith, Pacheco, & de Almeida, 2017](#)).

The data from our case study students are suggestive of a facilitative relationship between their acquisition of the metalanguage of attitudinal meaning and their effective deployment of a variety of nuanced expressions of affect, judgement, and appreciation in language and image. Further research investigating the efficacy of multimodal text creation in advancing repertoires of evaluative expression could productively extend the emerging use of the [Martin and White \(2005\)](#) appraisal framework in EAL writing pedagogy ([Bocia et al., 2019](#); [O'Hallaron & Schleppegrell, 2016](#)). Our work using moral dilemmas needs to be extended to other narrative genres and levels of schooling. This might involve contexts for enhancing students' expression of attitudinal meaning in digital texts such as multimodal 'rap' and video game creation. Research is also needed to investigate multimodal perspectives extending current applications of the appraisal framework in developing EAL students' verbal comprehension and expression of evaluative meaning in curriculum areas through Content and Language Integrated Learning ([O'Hallaron & Schleppegrell, 2016](#); [O'Hallaron et al., 2015](#)). As well as being provocative of the potential of research along these lines the current study offers an exemplar for teachers to make a commitment to learning and teaching multimodal metalanguages of attitudinal meanings, with broadened potentials and resources for realizing different communicative work in digital times.

## Notes

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## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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