

Historical learning using concept cartoons:

engaging with pupils' prior conceptions

Although perhaps unfamiliar to the majority of our readers, concept cartoons are not a new educational tool. Christoph Kühberger here lays out his rationale for using this technique, borrowed from science education, in history teaching. Concept cartoons provide a means for pupils to express such difficult historical concepts as the historicity of interpretations, and perspectives in contemporary sources, through the lenses of other characters. With a number of possible answers, students are able to justify their choices of which characters' lenses are more useful..

Christoph Kühberger
Christoph Kühberger is the Chair of History Education and Civic Education and Head of the History Department in the Faculty of Social Sciences at the University of Salzburg, Austria.

Concept cartoons have featured in science education for some years now, but history education has engaged little with this innovative approach to subject-based learning.¹ Concept cartoons are cartoons linking pupils' everyday experiences to the subject-specific concept being taught. This article will discuss the potential of concept cartoons as a method in the teaching of history, illustrating the method via two specific examples. With Austrian Year 7 pupils (12–13 years old) it looks extensively at the historicity of the film *1492*, and it touches on the idea of perspective in *The Life of Charlemagne* with Austrian Year 4 pupils (9–10 years old).

Concept cartoons primarily seek to address a diverse group of learners on the various levels of their prior conceptual knowledge, putting into explicit words the unspoken ideas or thoughts that may exist within the group, and enabling the discussion of these concepts, and productive work with them in the classroom setting. The cartoons thus encourage all pupils in the group or class to give voice to their thoughts on the issue at hand and to reflect on their domain-specific ideas and preconceptions, eventually developing greater nuance in their historical thinking.

Learner-centred teaching in the history classroom

Relatively recently – up to two decades ago – European history education was still assuming that pupils came to their first history classes without any prior knowledge of the subject. In most cases, educators failed to address explicitly learners' pre-existing ideas of history and the past, drawn from diverse experiences that unfolded in the course of their socialisation (e.g. toys, board games, films, TV, digital games, comic books, exhibitions).² Constructivist theories of learning take issue with this approach, emphasising instead the importance of taking into consideration the individual character of subject-specific pupil knowledge as a construct and of providing learning settings which engage young people on an individual level, linking new curricular content to their ideas and prior conceptions and thus enabling them to revisit and revise these ideas to the end of building their own body of knowledge.³ Lee explains: 'The teacher must discover and address the ideas pupils are operating with, and try to replace the weaker ones with more effective ones.'⁴ He argues that if pupils are to learn genuine history they will need to understand:

- how the discipline works
- about the basis of historical knowledge
- about what marks off the historical from the practical past

For Lee:

Even a copious supply of historically established facts is an inadequate diet for children, partly as a consequence of the nature of history, and partly because pupils are not passive receptacles who are brought to history with no ideas of their own. History is more than the sum of its discrete facts: a story composed entirely of true statements may be totally misleading, and in any case there is never just one story.⁵

Figure 1: Knowledge dimensions

Type of knowledge	Definition	Examples for historical thinking
factual knowledge	<p>knowledge of terminology</p> <p>knowledge of specific details and elements</p>	<p>meaning of terms such as 'evidence' and 'democracy'</p> <p>14 July 1789</p>
conceptual knowledge	<p>knowledge of classifications and categories</p> <p>knowledge of principles and generalisations</p> <p>knowledge of theories, models, and structures</p>	<p>6 June 1944</p> <p>meaning of concepts behind the terms 'evidence', 'perspective' and 'democracy'</p>
procedural knowledge	<p>knowledge of subject-specific skills and algorithms</p> <p>knowledge of subject-specific techniques and methods</p> <p>knowledge of criteria for determining when to use appropriate procedures</p>	<p>evaluating representations of the past</p> <p>critical analysis of historical sources</p> <p>interpreting evidence</p>
metacognitive knowledge	<p>strategic knowledge</p> <p>knowledge about cognitive tasks, including appropriate contextual and conditional knowledge</p> <p>self-knowledge</p>	<p>historical reasoning</p> <p>knowing one's own limits and possibilities</p> <p>having strategies to consult literature or to involve others to solve problems in dealing with history</p>

One of the key foundations underlying this approach to history education is conceptual knowledge, which experiences activation in the context of historical thinking. Systematic work in this area has cast light on the extreme heterogeneity of pupils' existing conceptions of central components of the nature of history even within the same class.⁶ Teaching methodologies are now turning noticeably to methods of incorporating pupils' prior experiences and preconceptions into the learning process on a sound evidence base and using them as springboards for the development of a robust body of historical knowledge.⁷

Concept cartoons in scientific learning

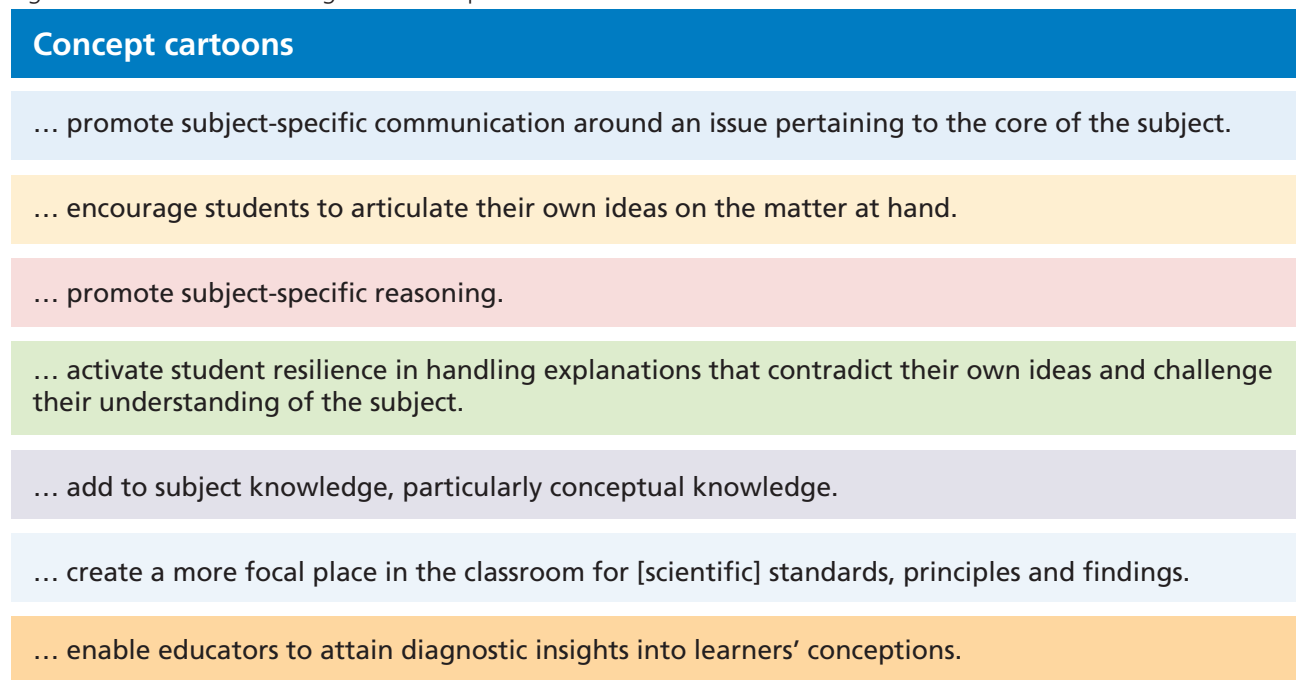
It is in this context that this article will outline a subject-specific approach to this challenge, originally created in science education, but amenable to transfer into the humanities and social science domain.⁸ The method revolves around 'concept cartoons' and their potential both in the diagnosis of subject-related learner preconceptions and in the centring, in the classroom setting, of key concepts of crucial importance to the learning process in the associated subject, taking particular account of conceptual knowledge.⁹ Thus – If one follows the taxonomy of Anderson and Karthwohl

(see Figure 1) – a knowledge dimension that is often not so centrally placed can be given a prominent position.¹⁰

Concept cartoons in science teaching show a group of people embedded in a conversational situation in which they engage with an issue or question which both stems from their everyday lives and has a core specific to the subject to which the question pertains. The reference to individual experiences and life conditions which the concept cartoons create aims to enable learners to make the connection between academic insights and their everyday situations, understanding subject-specific phenomena as relevant to their lives. Concept cartoons therefore seek to overcome the alienation of academic content from pupils' life experiences and everyday understanding – an alienation frequently observable in school-based learning settings. As in a comic strip, concept cartoons use speech bubbles to express a range of conceptual ideas. The statements contained in these bubbles should be credible and realistic, brief, and easy for learners to understand.

As a rule, the cartoons convey at least one scientifically or academically substantiated statement alongside common misconceptions or everyday patterns of thought around the same subject, with the latter ideally drawing on empirical

Figure 2: Benefits of working with concept cartoons



research into typical subject-specific thought patterns. The pedagogical objective behind concept cartoons is not primarily to find the 'correct answer', but instead to familiarise pupils with different ways of thinking on a topic and develop these on an academic or scientific basis.¹¹

Concept cartoons, and the various statements they offer, seek to encourage students to reflect on the matter at hand, expressing their suppositions, arguments and interpretations about the positions from which the cartoon figures are speaking.¹² As a rule, the cartoons are structured around a divergence of opinions, which provides impetus for discussion and communication. In Dabell's words, they are intended to provoke cognitive dissonance and in so doing to engage pupils in dialogue around the issue they present. Learners should:

- compare and contrast;
- look for evidence;
- justify their reasoning in response to the characters in the cartoons;
- all have an answer and contribute to the learning conversation.

[...] All answers, whether right or wrong, are used as stepping stones to achieve a fuller understanding. They are therefore used as talking tools, to help learners' build on each other's ideas, use each other as sounding boards and work creatively together to make sense of a key idea.¹³

The value of concept cartoons to historical learning

One significant benefit of concept cartoons is their capacity to pick up familiar ideas and concepts from pupils' everyday thinking. Working with a broad-based set of familiar ideas on a domain-specific issue helps teachers to resist the temptation to regard 'pupils' as a homogeneous mass; in history learning, concept cartoons take the diversity inherent in people's ideas

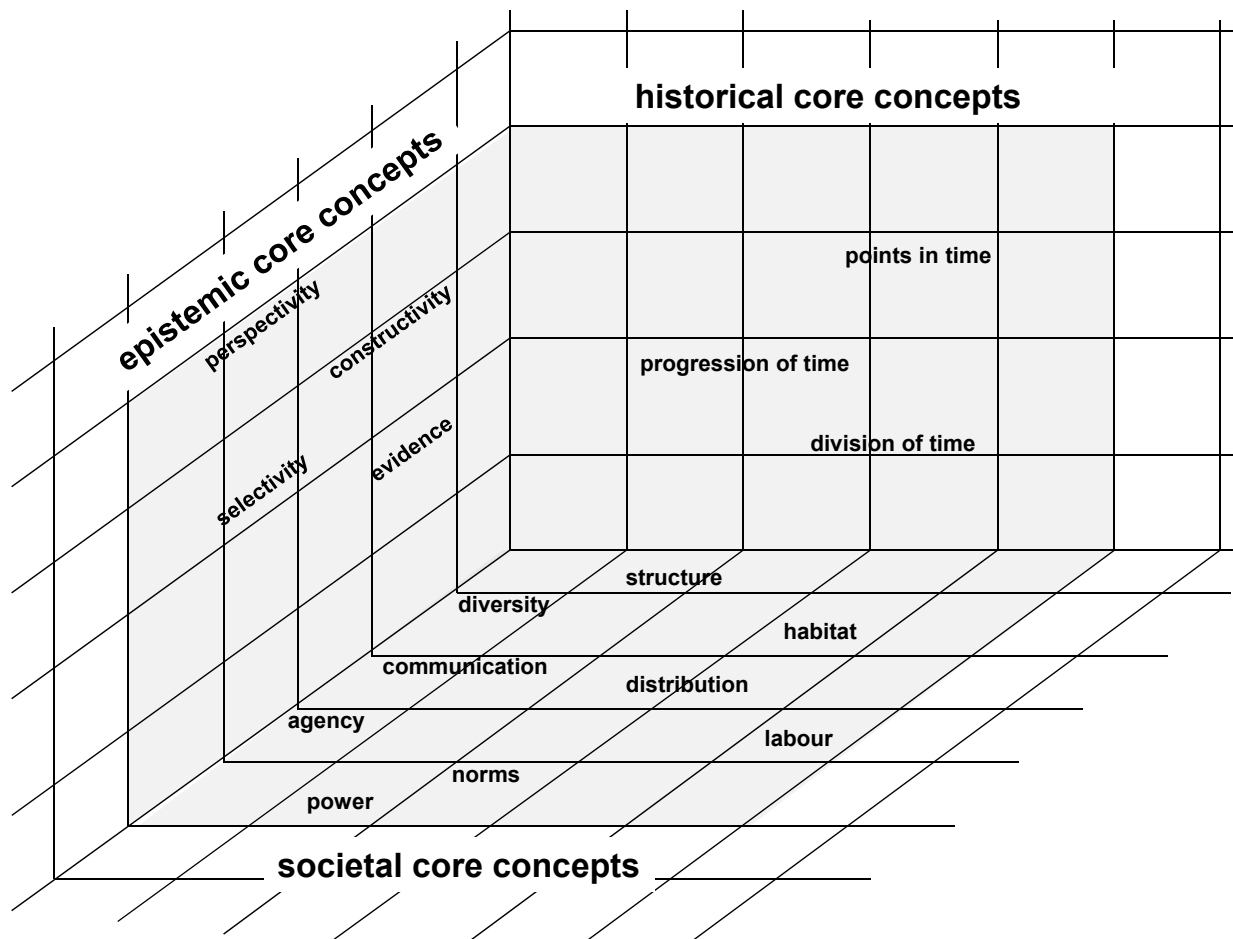
of the past, often conceived as a challenge, and turn it into an accepted, indeed celebrated, norm (see Figure 2).¹⁴

Research in chemistry education has pointed out the difference between 'domain-specific preconceptions' acquired outside school and 'homemade misconceptions', and has defined as erroneous ideas generated in and by the school setting. Preconceptions come into being on the basis of observations and encounters experienced in a pupil's day-to-day life; homemade misconceptions, by contrast, are classroom-generated and occur 'because tradition or complexity frequently prohibit the teaching of specific topics in a manner free of contradictions and accessible to all. Despite teaching by a specialist, a variety of notions persist which do not match up to the scientific theories and consensus valid today.'¹⁵

A classic setting for a homemade misconception's development in history classes is one in which pupils consistently encounter only one single interpretation of a specific past event, which then appears to the student as the only correct version; this process obscures the fact that other legitimate interpretations may well be available and that representing the past always, at its core, involves a struggle towards one potential way of approaching that past, rather than being the 'truth' as which learners often receive it.

Taking a look at pupils' everyday interactions with history is vital. Alongside helping us to perceive the signs of distorted concepts about history that may be apparent in school, it gives us the chance to notice pupils' prior concepts or 'subjective theories' in the first place and thus to take account of them in our teaching, which in turn may enable us to elicit from our pupils rough-hewn ideas on whose basis they seek to understand and explain to themselves the complexities of interpreting and handling the past: 'Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn them for purposes of a test but revert to their preconceptions outside the classroom.'¹⁶

Figure 3: Core concepts of historical thinking: diagram developed by Kühberger (2012)



The use of recurring core concepts not attached to a specific exemplary case, but available to a broad and diverse range of historical issues, helps us establish solid foundations for historical thinking in our students. The ‘Concept Cartoons for Learning’ resource developed by the University of Salzburg and Salzburg University of Education accordingly makes use of such core concepts.¹⁷

Core concepts

One productive use of concept cartoons to aid historical learning involves the presentation of domain-specific core concepts required for the development of historical thinking. In recent years, an academic debate around this approach has emerged in both English- and German-speaking contexts of the discipline. Researchers in the field have come to acknowledge the deeper knowledge about history and the past which goes beyond dates, personalities and ready-interpreted narratives.¹⁸ Knowledge of domain-specific methods is part of procedural knowledge, incorporating, for instance, critical engagement with historical sources and the evaluation of historical representations (see Figure 1). Studies on history education appearing in recent decades have shown an intensified interest in second-order concepts (such as ‘evidence’ or ‘chronology’), which have the capacity to provide pupils with necessary insights into the nature of history and open up vistas onto a broad spectrum of issues and topics pertaining to the human past. As Haydn says:

Concentration on such concepts helps the move away from an image of learning history as one represented by

‘stories from the past’ or factual content which has, in the eyes of pupils, very little connection with the business of living at the beginning of the twenty-first century. The understanding and use of key concepts in history helps to underline the significance of historical events and processes.¹⁹

There is a range of approaches to identifying such key concepts. The work of Lee and others has given us crucial milestones on our journey, and the systematic structures developed in research emerging from English-speaking regions draw our attention to important points; in my view, however, the epistemic concepts with which they primarily occupy themselves also require the type of concepts which help young people learning history to access societal contexts (e.g. ‘power’ or ‘norms’) located in the past and temporal interconnections (see Figure 3).²⁰

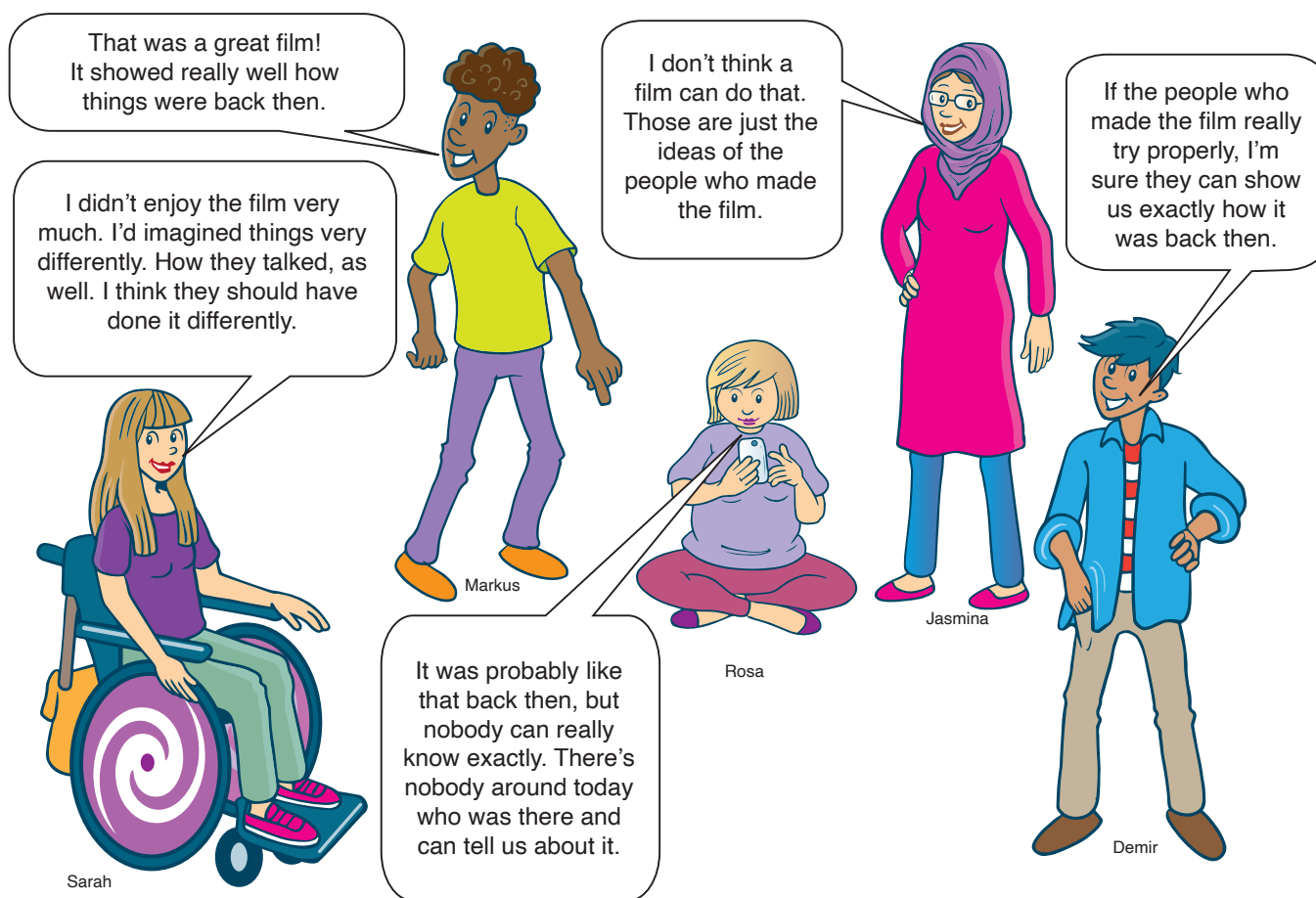
The Austrian history curriculum as illustrated in Figure 3 has adopted a model comprising three levels at which such core concepts unfold their effect, incorporating:

- epistemic aspects of historical thought;
- history’s central notion, that of time – conceived of as points in time, division of time into epochs, time’s processual progress; and
- societal core concepts including e. g. power, agency and habitat

Figure 4: Concept cartoon on the question 'Does the film excerpt show us things as they really happened back then?'

Does the film excerpt show us things as they really happened back then?

concept cartoons
for learning



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Example 1: films about the past

There are different ways of creating the speech bubbles used in conceptcartoons. We must keep foremost in our minds their function of putting into words specific ideas of the type found among children or young people at a particular stage in their education. A teacher might, for instance, ask a class for their thoughts and draw on them to create concept cartoons for other groups or classes. As a rule, a group or class consisting of fifteen or more pupils will yield a range of ideas and thoughts sufficient for condensing into speech bubbles that cover the types of notions we require. Another method entails using empirical work pertaining to domain-specific ideas and conceptions held by school students.

The example I present here (Figure 4) uses findings from a study around feature films about topics from the past.²¹ Lower secondary school students (Austrian year 7, 12–13 years old) were asked to assess the extent to which scenes they were shown from the epic historical drama *1492: Conquest of Paradise*, depicting Christopher Columbus's arrival on the American continent, showed the events as they had really happened. The study's aim was to ascertain the extent of learners' assumptions that films can accurately represent the past.²² The findings are amenable to categorisation into five specific types of ideas or epistemic beliefs in relation to young people's historical understanding (Figure 5).²³

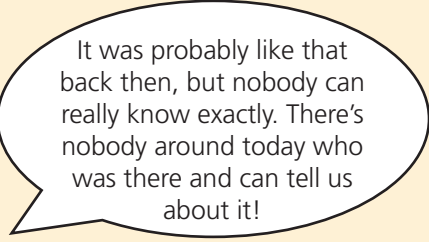
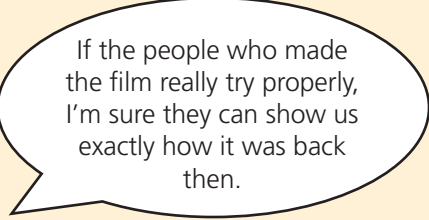
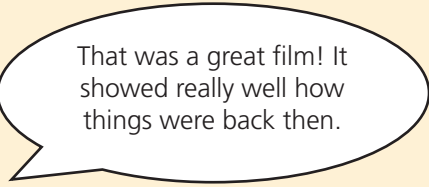
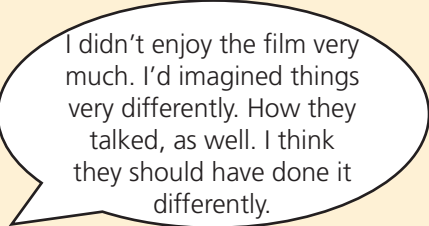
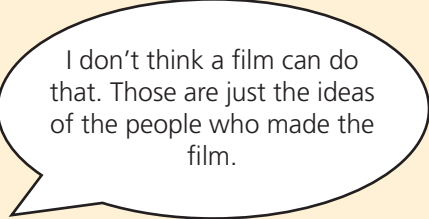
Generalisation of the responses to this study enables the use of the resulting concept cartoon for classroom-based critical evaluation of various film portrayals of past events. This evaluation retains learners' specific ideas and notions while making them applicable beyond the particular film on which the original study centred. In this way, the cartoon figures present 'ideal types' of statements which provide repeatedly usable responses to the question at the heart of the cartoon, 'Does the film excerpt show us things as they really happened back then?'

Linking up the concept cartoon to the core concepts outlined in Figure 3 reveals the ability of the cartoon to engage pupils with the notion of history as a construct. That is the insight that history can only ever be an interpretative attempt to draw close to the past, constructed by people asking a question in a particular way, using sources which have undergone examination and interpretation, with the picking up of particular concepts, necessarily subjective evaluations, and so on. The dialogic nature of the cartoon helps to enable this.

How to use concept cartoons

Bearing in mind that concept cartoons are an attempt to beat a path to pupils' individual ideas around domain-specific concepts (see Figure 6), it is sensible to allow time and space in class for an initial phase of work (Phase 1) revolving

Figure 5: Film feature / historical understanding typology, with frequency of occurrence in the sample (n = 115)

type frequency of occurrence in the sample (n= 115)	definition of type	generalized exemplification
agnostic or sceptical type 4.4%	This type believes that accessing the past and identifying its true events and nature is impossible, or possible only to a very limited extent.	
positivist or historicist type 16.5%	This type believes that it is fundamentally possible to create an objective representation of the past, if the author (here: filmmakers) works hard enough at it.	
naïve or factuality-orientated type 16.5%	This type does not believe in a distinction between history and the past. The idea of history as a construct is a foreign concept to this type.	
critical type 26.1%	This type believes that a representation of the past is steered or even distorted by certain aspects. Its character as a construct is not clearly addressed.	
constructivist type 36.5%	This type believes that history is a (re)construction which meets specific quality criteria. In this view, an objective representation is impossible; 'history' is always a construct driven by the interests, skills, and intentions of those who created the representation, by sources, and by the medium of representation chosen, among other factors.	

around the learners' first engagement with the concept cartoon. The teacher can point out the question at the heart of the dialogic situation the cartoon shows and guide pupils to read the statements in the speech bubbles as responses to that question. This is what is meant by a dialogic situation: the intention is to create a real dialogue. This is not a situation where the teacher can predict all the answers, but one where the learners can twist and turn their ideas in order to get deeper into the problem raised. Questioning becomes a dialogue, not a game of guessing what's in the teacher's head.

A second phase (Phase 2) should involve pupils being given the opportunity to articulate their own ideas on the question. They should be encouraged to formulate their views, rather than simply hiding behind repetition or rehashing of the statements made by the cartoon characters. It is vital here to ensure that all pupils are able to either raise their ideas orally or to write them down, without fear of attracting negative comments or sanctions for their views. It will doubtless be advantageous here to give pupils time to think about the question and use methods to support them in this, such as

Students working on concept cartoons

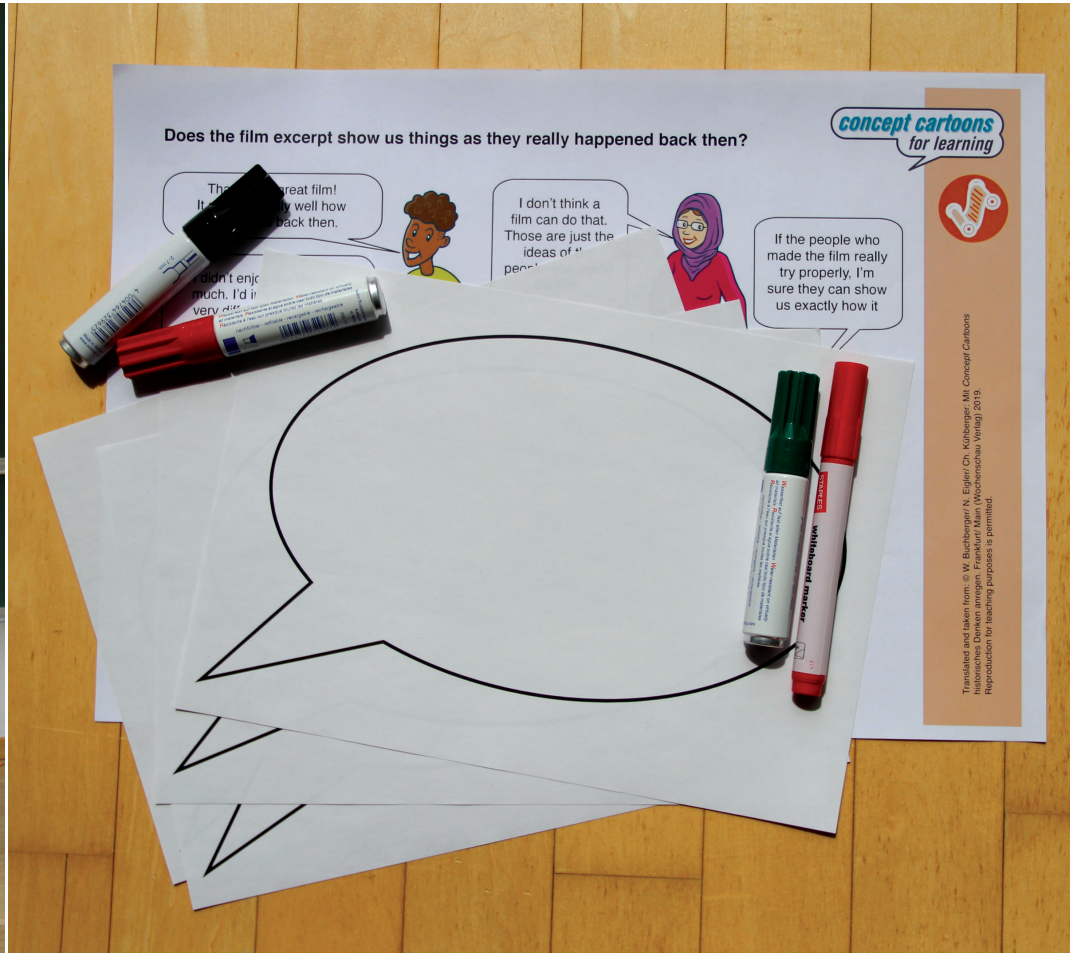
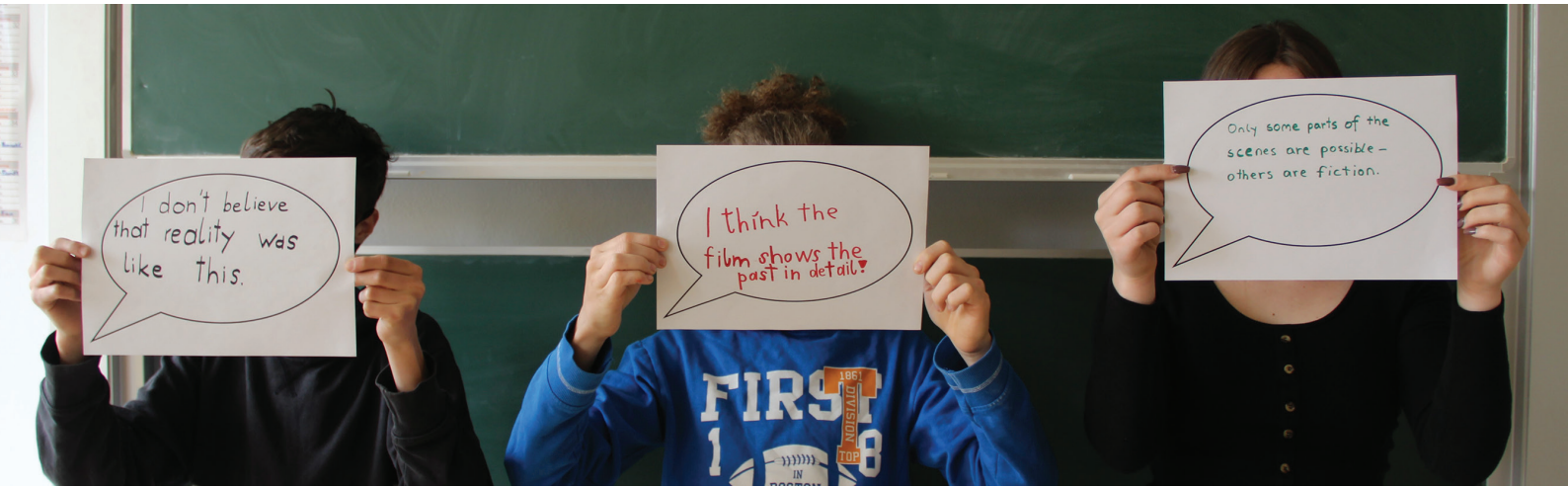
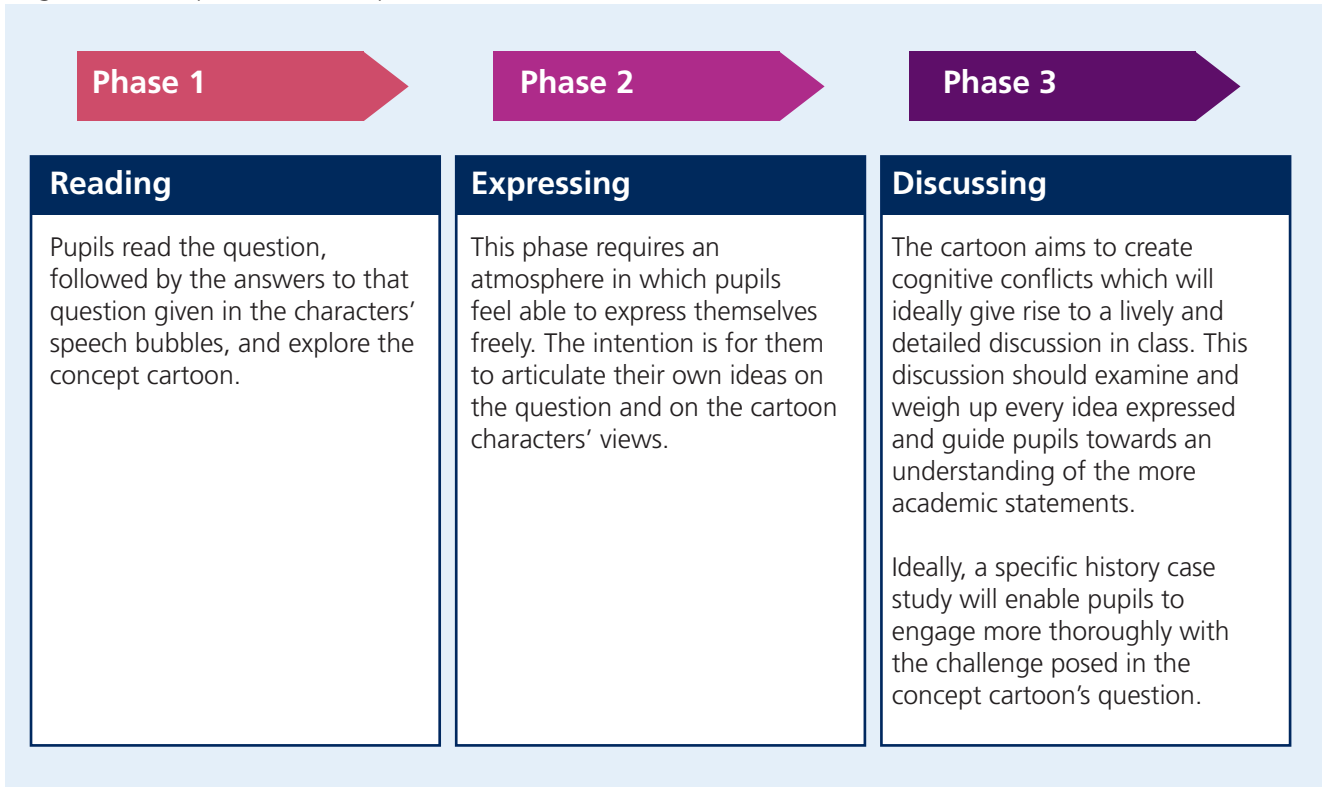


Figure 6: Three phases of concept cartoon use



giving everyone a piece of paper with an empty speech bubble to write down their own thoughts.

The seeds of phase three (Phase 3) are planted in the previous phase. The idea here is that the pupils are themselves a source of cognitive dissonance, followed by productive transformation of the differences emerging in the ideas represented by the cartoon characters. In this way, the disagreements provoked in the lesson transition into a shared search for an answer to the question at hand that rests on a solid domain-specific base.

Concept cartoons as an approach to teaching

At their core, concept cartoons are an approach to teaching that, directly or indirectly, calls upon pupils to take up a stance ('And what do *you* think?') and share their views on the various statements with their peers and the teacher.²⁴ This enables the latter to identify the inaccurate or unstable conceptions around subject-specific issues which, in numerous cases, pupils may espouse.²⁵ This function and objective of the method makes it important for the dialogue that takes place not simply to elicit opinions, but to call for and generate arguments and rationales. From my own experience I can say that a whole-class reflection following the small-group work is quite helpful.

However, as previously indicated, the point of the exercise is not to pursue a single-choice process with the outcome of identifying the one 'academically sound' statement among the cartoon's speech bubbles. Instead, it is to ascertain and analyse the various positions put forward in the classroom setting, including those of little substance, so that pupils can comprehend their qualitative differences and discern them from one another. One way of doing this may be a whole-group discussion; another may be the use of follow-up

activities exploring evidence and interpretations around the past with the aim of generating further insights into the issue at hand. After this phase, the lesson returns to the cartoon and to the ideas expressed previously by the pupils, reassessing and discussing them in light of these insights.

We know that some learners find it easier to contribute in class when the lesson does not require them to comment upon or call into question statements made by their classmates. With this in mind, the discussion could include critical views and argumentation regarding statements made by figures from the concept cartoon.²⁶ We should not lose sight of appropriate differentiation (see Figure 7); rather than writing down their ideas, students could be encouraged to draw them or engage in open-ended role plays. Another possibility is provision of supports and aids such as flashcards rewording the speech-bubble statements, further simple or advanced explanations, sentences for pupils to complete, and so on.²⁷ Consistent centring of each pupil's reflective engagement with their own (pre-)concepts, ideally leading to their modification and/or expansion, is crucial, however. As this outline shows, concept cartoons may represent a useful resource for domain-specific diagnosis of existing conceptions or for the creation of 'teaching moments' or opportunities for learning which may then, via follow-up activities, enable more profound exploration of specific issues pertaining to history as a discipline (Figure 8).²⁸

Example 2: The Life of Charlemagne

The second concept cartoon I will discuss engages with the core concept of perspective: see Figure 9.²⁹ Alongside the importance of pluralism (recognising a plurality of perspectives on the past) from the retrospective (present-day) vantage point, exploring the perspectival nature of historical sources is a key moment in history learning.

Figure 7: Options for differentiation: helping learners understand the concept cartoon and document their own ideas

Some learners may benefit from a reduction in the number of statements given in a concept cartoon. It is important, however, to ensure that the idea of the concept cartoon – i.e. the presentation of a diversity of views – is not lost; this requires the inclusion of at least three statements.	Teachers can provide additional or more in-depth information on each of the positions set out in the cartoon statements, increasing the level of cognitive challenge, and ask pupils to match each set of information to the statement it pertains to.
Recording the concept cartoon statements and providing them as audio content accessible via a computer or other playback device could support pupils who have reading difficulties or vision loss.	Sentence starters which pupils can complete with their ideas can help stimulate the creation of statements of their own.
Learners with reading difficulties may need to access a different form of presentation for the statements (e.g. greater line spacing, sans serif fonts, larger font size). Speech bubbles are still used.	In some cases, it may be helpful to offer specific suggestions for wording particular aspects of the topic to which learners may wish to refer in their own statements.
Teachers may provide rephrased versions of the statements in the concept cartoon, with the same content and at the same level as the original statements, and ask pupils to match each statement to its rephrased version.	Pupils may document their ideas in response to the concept cartoon in different ways (by, for example, drawing a picture, writing an essay, or creating a role play). It is important for them to share their creations with the class and explain the ideas behind them.

Figure 8: Two principal uses of concept cartoons

Domain-specific diagnosis of existing preconceptions

Concept cartoons can serve to inspire and support teachers' observations of pupils' conceptual ideas and notions on a domain-specific issue. These observations may provide information on the pupils' associated prior learning and subject-related understanding. Using concept cartoons can enable teachers to take these ideas, beliefs or preconceptions into account when preparing a teaching unit and consider ways of building on them in an academically sound manner.

This is a process which often takes place in the classroom, usually on an informal basis by means of the teacher observing the process and responding to the differing attitudes, abilities and conceptions which pupils bring to class. However, the use of a concept cartoon at the beginning of a new sequence of lessons can be helpful in terms of making these prior conceptions a focal part of proceedings. The use of a concept cartoon at the end of a period of close study of a central topic may also be productive, enabling the teacher to determine in retrospect whether the pupils have obtained the intended learning and understanding from the lessons.

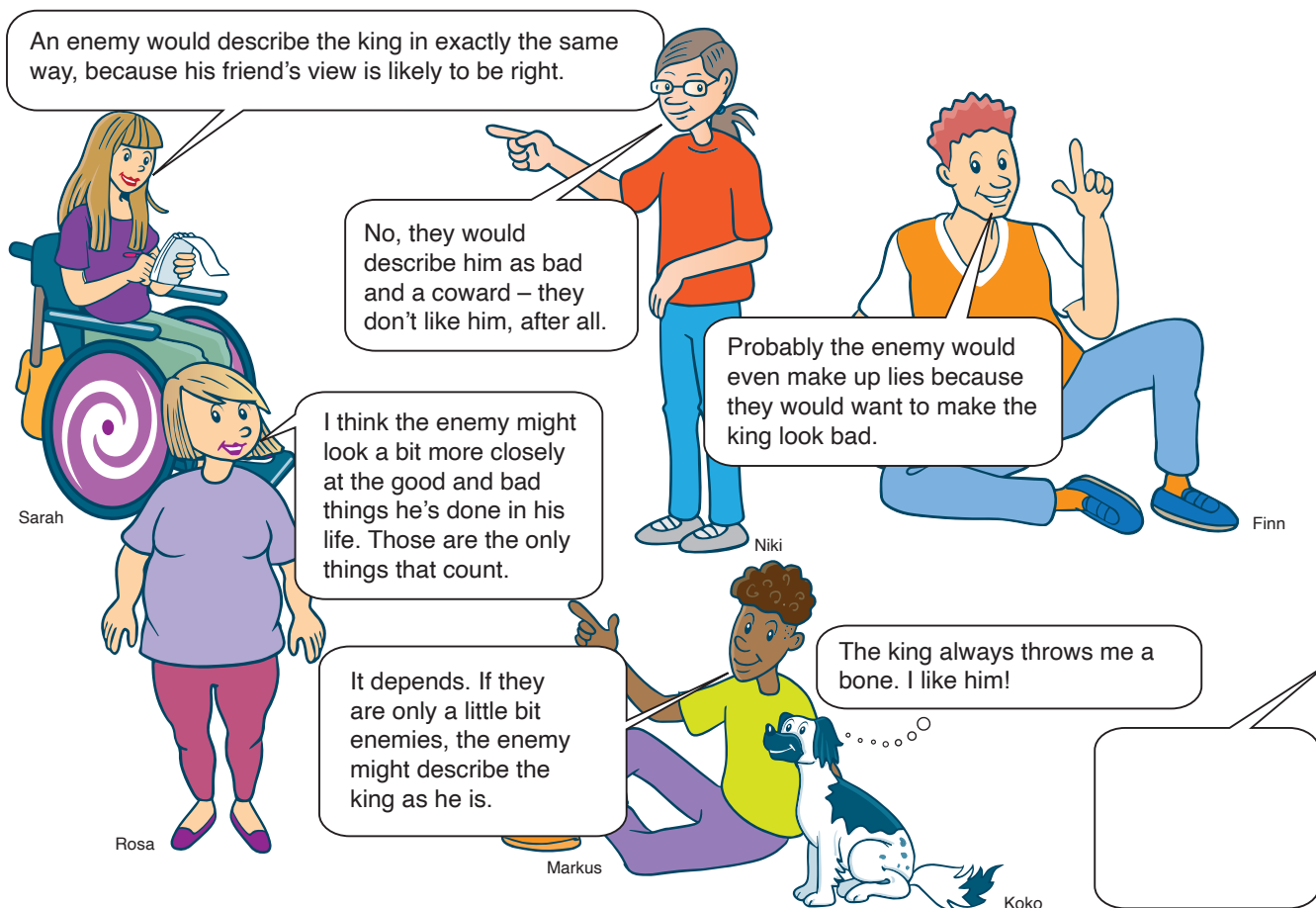
Learning opportunities

Used to generate 'teaching moments', concept cartoons give learners the opportunity to engage closely with a subject-related issue, accessing it easily via the question formulated in the cartoon and enabled to give voice to various alternative patterns of thoughts and ideas. Ideally, the lessons learned from the cartoon are available for transfer to other cases put up for discussion by the teacher in the context of curricular requirements.

Concept cartoons can be designed and used for a broad range of different topics in history lessons. Their use extends beyond diagnostic observations on the part of the teacher, as they are helpful in themselves as aids to pupil engagement with a central question or issue of the subject at hand. The cartoon genre and the dissonance triggered by the content create immediate interest among learners.

Figure 9: Concept cartoon: 'How would an enemy of the king write about him?'

The king's friend describes him as a hero and as a strong man.
How would an enemy of the king write about him?



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In this example, primary-aged children read an excerpt from an historical source, the medieval *Vita Karoli Magni* (*The Life of Charlemagne*), written after the death of Charlemagne by his friend Einhard, who is evidently keen to present the king in a positive light (Figure 10).³⁰ The placing of one's own friends on a pedestal is a familiar phenomenon; the concept cartoon generalises the specific situation, making the example transferable to a range of different historical configurations that bear similar characteristics. The typical responses placed in the mouths of the cartoon figures are taken from discussions with fourteen pupils in Austrian year 4 (9–10 years old). The cartoon additionally features an empty speech bubble for learners to enter the conversation with their own thoughts.³¹

Uses of concept cartoons

We will conclude by pointing to findings of empirical research on concept cartoons. Since their development by Keogh and Naylor at the end of the 1990s, they have been the subject of numerous studies in the field of science education, primarily demonstrating that their use supports constructivist approaches to learning and the incorporation of scientifically-based procedures into the classroom while meeting the demands of teaching 'on the ground'.³² It appears evident that various aspects of concept cartoons exert positive effects on domain-specific learning, including motivational

moments, language skills, and outcomes of formative assessment. In the context of history education, the most significant findings are those showing that concept cartoons:

- enable teachers to engage with and work on pupils' conceptual ideas;
- provide effective stimuli for dialogue and discussion around subject-based arguments; and thus
- boost the emergence of cognitive conflict as a teaching principle.³³

To date, however, empirical studies of concept cartoons from the humanities are thin on the ground. The work of Felix Fenske *et al.* on German learners' political judgements in the context of the use of concept cartoons in civic education shows us that the method has the potential to support both learner- and subject-oriented aspects of learning in this subject. Concept cartoons may also increase interest in debatable political issues and raise learners' motivation to explore and discuss them, helping them to recognise the benefits of scientific thinking to people's – and specifically their own – engagement with political matters in day-to-day life.

Concept cartoons strengthen learners' interaction with arguments and counter-arguments and help them access

Einhard (770-840) was a Frankish scholar. He was a confidant and perhaps even a friend of Charlemagne. After his master's death, Einhard wrote a book about him which included the following passage:

'His body was large and strong; his stature tall but not ungainly, for the measure of his height was seven times the length of his own feet. The top of his head was round; his eyes were very large and piercing. His nose was rather larger than is usual; he had beautiful white hair; and his expression was brisk and cheerful; so that, whether sitting or standing, his appearance was dignified and impressive. Although his neck was rather thick and short and he was somewhat corpulent this was not noticed owing to the good proportions of the rest of his body.'

Tasks:

1. Read the description [above].
2. Sum up how Einhard describes Charlemagne's appearance.
3. On the whole, does Einhard approve or disapprove of Charlemagne? Give reasons for your view on the basis of the description.
4. Why do you think Einhard described Charlemagne the way he did? Give your thoughts.
5. Who might want to describe Charlemagne differently from Einhard? Give reasons why you think this.

a more nuanced perspective on the political issue at hand.³⁴ In this way, they may represent an opportunity for supporting an approach to historical learning that places learners, specifically their prior cognitive experiences and ideas, at the centre of the process and seeks to help them develop their individual lines of thought in accord with the nature of history. It therefore makes sense to focus on central concepts of historical thinking in concept cartoons. These recur in various case studies across the curriculum and can thus contribute to reaching and working on the deep structure of the discipline of history.³⁵

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The characters in the concept cartoons were developed by Silvia Kronberger and Christoph Kühberger and realised by Graham Wiseman. The intent behind them is to depict and reflect, as far as possible, a diverse group of learners. Our graphic designer was faced with the task of developing cartoon-style representations – which are inevitably reductive due to the nature of the genre – that are diversity-aware without crossing the line to the stereotypical. The dog Koko, seen in Figure 9, underlines the cartoon genre again.

The characters reflect various categories of diversity, including disability, gender, religion and ethnicity. The speech-bubble statements do not reference these categories; that is, they do not reflect what society at large might consider a view 'typical' of a person with the background shown in the visual image. Each cartoon figure is an individual; each has a name, which the teacher and the pupils should use when working on the cartoon. The use of names facilitates communication among the group and emphasises the individuality of the thoughts aired in the speech bubbles. Pupils should not infer any correlation between a specific figure and a particular level of thinking; in the various concept cartoons, it is a different figure each time that makes the academic/scientific statement.

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