

How analogies relate to systems thinking

parents : school :: customers : shopping store

Parents choosing a school for their child's education is parallel to customers at shopping stores, where OFTSED reports, verbal feedback and overall positive experiences at a school encourages a child to stay there. This is like an economic transaction → *enrolling a child at school = more children = more funding per student for that educational institution = more opportunities for staff and children = greater cycle of satisfaction.*

Scriptwriting : play :: spine : body

Boundary A (in the systems diagram) shows entities that are the building blocks of the production, i.e scriptwriting. Like an anatomical structure, the script is the backbone of the whole play and can't be produced without it. It is akin to the spine of our bodies, as without this 'spine', humans cannot move accordingly to perform functions. Similarly, the production needs a script to base their performance upon.

Teachers : support staff and students :: bees : flowers

Teachers tell the TAs, LSAs and students what the expectations are, which is similar to how bees pollinate a range of flowers – knowledge is dispersed in this manner, as many students (flowers waiting to bloom) internalise what their single teacher (a bee) is telling them to do (instructions = pollen). Education in this sense is like pollination of 'knowledge'.

Headteacher and Senior leadership : teachers :: CEO : employers

It is not surprising that Senior Leadership and the Headteacher act as CEO and other higher-level authorities that would occur in companies. Although most schools are not commercialised yet, schools still operate similarly to a business as employers like teaching staff typically showcase their working standards to SLT – e.g. in the form of observations, meetings discussing pupil feedback, paperwork, etc.

Special effects : production :: garnishing/toppings : food

The Christmas production is consumed by the audience, akin to the process of eating food – it revitalises us with nutrients like how a Christmas play revitalises us with human emotion and entertainment. Garnishing and extra toppings on food makes it even more delicious which is like how special effects enhance a performance = *more positive emotions = more positive feedback = more likely to keep their child in a school that provides fun learning = more funding for more students enrolled.*

Performance : audience :: product : consumers

The performance of a school Christmas play is mostly for fun but it is a production that will be consumed by a wide audience, representing the capabilities of students at this school. Likewise, a product is consumed by target audiences across society – both the school production and products in a store will entice feedback in some fashion as it provides a form of entertainment. *If not done well, people will not want to experience it again = less satisfaction = less likely to want to send a child to that school akin to not wanting to buy that product anymore.*

Motivation : students :: positive reinforcement : pets

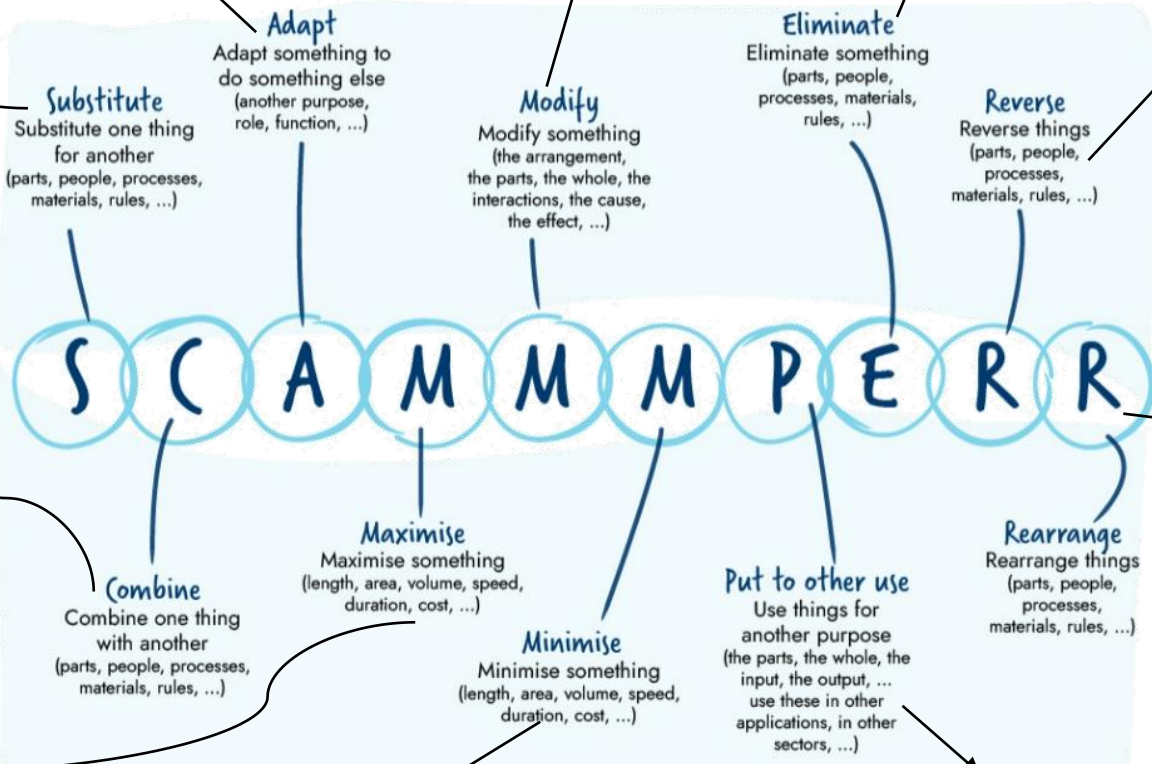
Like Pavlov's dog theory, positive reinforcement conditioned pets to do the 'right thing' in order to receive food as a reward. Motivating children with rewards and positive encouragement entices them to focus and perform to the best of their ability which allows the production to run more smoothly.

What are the systems, sub-systems and super-systems of interest? What are they similar to? How could they be changed?

A lot of these analogies mirror *economic systems* where a product (Christmas production) is consumed by parents and carers (customers). However, it was interesting to dig deeper and notice how some analogies played into anatomical systems or ecosystems, where *education is dispersed through a process of knowledge then internalised through its students = more knowledge = more qualifications = higher level thinking = more prepared for a range of skilled jobs in the economy.* It could be changed by allowing the parents/carers (i.e. consumers) to have more input possibly, which leads to potentially higher satisfaction.

Project: creating a Christmas Production with primary school children for parents and carers

Systems thinking: like a chain reaction of an economic transaction = more investment = more polished production = higher student satisfaction = more likely to keep child at that school = more funding for school.



Substitute different acting roles / background roles for whatever suits students' strengths best

Need to bear in mind SEN and EAL children and how this production feels for them – use props or staging that makes them feel most comfortable / adapt to their needs

Use props and current resources in different ways to save within budget

Modify the way the audience interacts with the production: print out QR codes or other types of media that makes performance feel more immersive – e.g. fake tickets placed in seats

Eliminate unnecessary scenes that are too complicated to practise – bear in mind there's a deadline to work towards so just focus on scenes that children comprehend well

Could put the 'end' of the play first or what seems like the end – might be a risk but makes performance more interesting?

Have food, drink or some sort of snack first as parents/carers come in – might quell hunger and increase focus during a long performance

Use props, clothing etc at home or at school to be used for the play = not long-term change

Use different year groups / classes together – different adults can play towards their strengths and work with different groups of kids to hone play's scenes before coming altogether

Utilise the relationship between parents/carers and staff and pool together resources from home and at school for use in the play

Maximise the funding for the school's budget by putting in a funding box at the end of the hall / after the play to allow parents and carers to donate for the PTC's uses

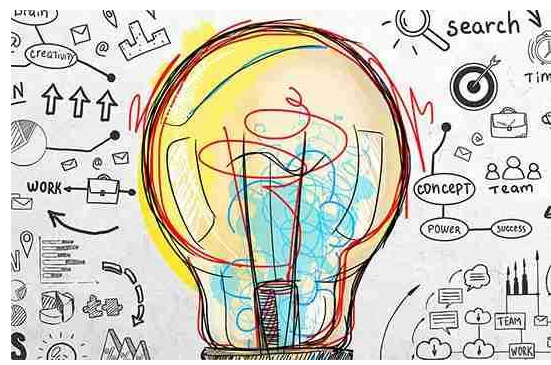
Use microphones or a boosting sound system to amplify children's voices so those at the back of the audience can hear properly, rather than continuously reminding kids to project their voices when a lot of them forget to

Could minimise the duration of the play so kids don't become restless – could then use this to focus more on scenes in depth rather than a great abundance of scenes that aren't polished and then becomes tiresome to get through

Put spare adults to use to help maintain behaviour management, wayfinding for parents and carers, helping with seating, last minute changes such as filling in for absent children; other children who are more available could help give out 'tickets', etc = more immersed in production

Rearrange the staging as some scenes differ in setting – use children or reliable adults to do this cohesively – behind a backdrop or incorporate new staging within actions of the play?

Rearrange how the audience sits? Could be facing in towards a central aisle rather than towards the stage / different scenes in different places in the hall before being pieced together – (like Secret Cinema has different groupings with different actors)



Idea generation - reflection



Add a score (from 1-5, where 1 is 'not much' and 5 is 'a lot') for how effective you think each tool is for boosting idea generation on the four measures.

Overall, I found these two tools quite useful in exploring how to generate ideas to tackle creative problem solving in the form of design thinking.

The flexibility and fluency of ideas seemed to flow more easily to me but, unsurprisingly, originality and elaboration took a bit longer for me to hone. Some aspects of the SCAMPER model I found difficult as there is some overlap between letters. The analogies tool is quite fascinating for me as we use analogies within our day-to-day life; incorporating that model to tackle problem solving is quite innovative by using tools we may already have to adapt for new problems.

	Flexibility The variety and (or diversity) of ideas produced during divergent thinking.	Fluency The quantity of ideas produced during divergent thinking.	Originality The degree to which the ideas produced during divergent thinking are different to other people's (either in a group or in the world).	Elaboration The extent to which the ideas produced during divergent thinking are detailed and developed.
Analogies	5	4	3	4
SCAMPER	4	3	3	3