Using video modelling to teach expected behaviours to primary students

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Video Self-Modelling (VSM) and Video Peer-Modelling (VPM) have proved effective when teaching pro-social behaviours to students with disability, individually and during whole-class instruction. In Victoria, Australia, this has been achieved in specialist schools using a television programme known as meTV. This study examined the application of both the meTV model and video modelling when teaching expected behaviours in mainstream schools implementing Positive Behavioural Interventions and Supports (PBIS). The trial found that, after minimal viewings, the use of VSM and VPM, as well as the meTV model, were effective interventions for teaching pro-social skills for all students.

Key words: active matrix, positive behavioural interventions and supports, teaching prosocial skills, video peer-modelling, video self-modelling.

Introduction

A core component of Positive Behavioural Interventions and Supports (PBIS) is to teach all students prosocial skills as a preventative intervention, and then to
provide increasingly targeted and intensive teaching of these skills to reduce any
behaviours of concern exhibited by students for whom universal whole-school
approaches were ineffective (Horner et al., 2010). In schools implementing PBIS
with fidelity, the teaching of these skills should be directly aligned to the school’s
Matrix of Expected Behaviours (Simonsen et al., 2011). A PBIS matrix docu-
ments those behaviours students are expected to demonstrate while at school, or
while engaged in school activities such as camps and excursions.

In Australian schools using PBIS, teachers support students to learn expected
behaviours through modelling, role-play, repeated practice, and feedback that
provides both acknowledgement and reinforcement. In addition, in Victorian
(Australian) specialist schools (those that specialise in teaching students with
disability or additional learning needs), teachers have been successfully using
a television programme known as meTV to teach expected behaviours. This
daily television programme employs two techniques to help students in learning
expected behaviours: Video Self-Modelling (VSM) and Video Peer-Modelling
(VPM). While results from specialist schools indicate that the use of VSM
and VPM has been effective in teaching students with disability expected be-
haviours, no attempt had been made to trial these approaches in mainstream
schools. Additionally, mainstream schools had not been exposed to the meTV
television programme nor taught the process for implementing VSM or VPM. In
Victoria, there is little interaction between specialist and mainstream schools; this
research provided an opportunity to take an exemplary practice used in specialist
schools and examine its transferability to mainstream schools.

This study was designed to explore whether training primary school teachers to
use VSM as well as VPM, by adapting the meTV model for mainstream schools,
would provide an effective intervention for students, including those with dis-
ability, to learn pro-social skills and the expected behaviours identified in their
school’s PBIS Matrix.

**Video Self-Modelling (VSM)**

VSM is a type of observational learning in which a student appears on video to
perform a desired behaviour at a targeted level despite being unable to perform that
behaviour in reality (Burton, 2011). This is achieved through the videographer’s
careful selection of material being observed and videoed, followed by careful
editing, which results in a video that appears to show the student demonstrating
the desired behaviour. VSM is an evidence-based practice that supports Positive Behaviour theory, in that the student only sees themselves succeeding and achieving a targeted goal, and the dysfunctional behaviour or deficit skill is never shown (Buggey, 2005).

The concept of observational learning, or modelling, was introduced by Albert Bandura in the 1970s. In education, VSM has come to be recognized as a form of rapid learning and skill acquisition in a broad range of social, behavioural and academic contexts (Buggey and Ogle, 2012; Dowrick, 2012; Young-Pelton and Bushman, 2015; Schaeffer et al., 2016; Regan and Howe, 2017). Dowrick (2012) highlighted the case of ‘Shirley’, who experienced significant improvement in her ability to walk after six viewings of a two-minute VSM, whereas six months of twice-weekly physiotherapy and occupational therapy had produced no change.

Rapid learning using VSM has also been demonstrated with adolescents with moderate levels of depression (Kahn et al., 1990). In this research, adolescents viewed positive, happy footage of themselves in successful social interactions. Kahn et al. (1990) found that VSM viewed for a total of 21 minutes had the same effect on mood and self-esteem as 30 hours of Cognitive Behavioural Therapy spread over eight weeks. Rapid learning with VSM has also assisted a child with selective mutism. Kehle and Owen (1990) found that after one viewing of a three-minute VSM, a child who had not spoken at school for three years was able to introduce his classmate to the researcher. A final example of rapid learning in VSM is in the social engagement of 4-5-year-old children increasing from 5%-10% to 24%-43% after watching their two-minute VSM once a day for seven school days (Bellini and Akullian, 2007).

**Video Peer-Modelling (VPM)**

Similar to VSM, Video Peer-Modelling (VPM) results in a video in which a student appears to demonstrate a behaviour or skill, but a peer may have been substituted in the video to perform aspects of the skill or behaviour unable to be demonstrated by the student (Marcus and Wilder, 2009). While peer-modelling of reading is a widely accepted educational intervention, the application of video peer-modelling has received limited attention (Decker and Buggey, 2014). Bellini and Akullian (2007) explain that children can acquire a vast array of skills through observing rather than through personal experience. Dowrick (2012) found that even if a viewer knows it is not them in the VSM, and they see ‘themselves’
performing the task (using editing to make it look as though they are), the skill acquisition rates are the same. In fact, the closer the model is to the student’s self, the more effective the model is in helping the student acquire the skill.

Benefits of video modelling for teaching prosocial skills

The advantages of video modelling over in-vivo (live) modelling, as discussed by Charlop-Christy *et al.* (2000), include considerations such as the consistency of video over live demonstrations, and that the skill can be shown in a variety of naturalistic settings to support generalization of the skill. The authors also found that video modelling allowed greater control of what was observed by the learner; further, video could be re-used with other learners with similar learning goals. Charlop-Christy *et al.* (2000) affirmed that video modelling led to faster skill acquisition and better generalization of skills than in-vivo modelling. In their study, children with autism were given video models of a new skill and in-vivo models of a different but similar skill. The target skills were in social play, conversation skills, and daily living skills. The study also showed that video modelling was more effective than in-vivo modelling with children with autism, as viewing the video did not require social interaction such as eye contact and feedback. The authors concluded that video-modelling was non-threatening to watch for children with social difficulties.

meTV

In Victoria, Australia, VSM/VPX has been integral to an award-winning television programme, known as meTV (Spence, 2015). Initially the programme was shown daily to students in one specialist school, as a whole-school approach for teaching pro-social skills, and teachers were coached in ways they could integrate this programme into their classroom routines and practices. When the school commenced implementation of PBIS, meTV was extended to include segments designed to teach students the school’s behavioural expectations documented in the PBIS Matrix of Expected Behaviours. meTV follows a prescribed structure that includes an opening introduction, discussion of the day’s weather, school news which includes a VSM of an individual student demonstrating an appropriate behaviour, a section called ‘Listen Up’, where teachers remind students of targeted behaviours, a main attraction that features and celebrates the achievements of a student or group of students, a values video set to an engaging song, a VPM, and the closing credits.
From 2013, the meTV programme has been televised in other specialist schools across Victoria, Australia. Specialist schools across the State create and submit video models of teaching expected behaviours and these are aired on meTV. The show is now broadcast across the world, viewed in mainstream and specialist schools, as a vehicle for explicitly teaching social and behavioural expectations to students with disability. It currently receives 80,000 views per week and has had more than nine million views online. Since this expansion of meTV, many VSMs and VPMs have been created to teach pro-social behaviour to students with disability; the next stage was to expand the video database to include videos more relevant to a mainstream school population. This research presents the findings from the implementation of VSM/VPM, utilising the meTV model, in two mainstream primary school settings as an intervention for teaching pro-social skills aligned to the school’s PBIS Matrix.

**Method**

**Participants and settings**

Participants in this trial were students and staff from two Victorian government primary schools. School 1 was a mainstream primary school that was in its sixth year of operation, after several local primary schools merged. Situated in an outer suburb of Melbourne, Victoria, the school currently enrolls over 400 students, with over 80% of these students having English as an additional language. School 2 was a mainstream primary school that has operated for over 60 years. Situated in a regional location, the school currently enrolls approximately 150 students, with only 2% of students from language backgrounds other than English. On the Index of Community Socio-Educational Advantage (Australian Curriculum, Assessment and Reporting Authority, 2015) both schools are below average in terms of the educational advantage the students bring to school based on parent education and occupations as well as geographic area and proportion of Indigenous students.

These two schools were selected based on their Tiered Fidelity Inventory (Algozzine et al., 2014) results that showed fidelity at Tier 1 of PBIS. For a school to be determined as implementing Tier 1 of PBIS with fidelity, they are required to be teaching students the behaviours that have been documented on their PBIS matrix, acknowledging students when they display these expected behaviours appropriately, and have a consistent way of responding to students who are not displaying appropriate behaviour. Both schools were considered to be exemplary at Tier 1 of PBIS.
Each school was sent an outline of the project with expectations of all parties involved. The teachers who chose to participate in this research were already teaching expected behaviours as part of their daily teaching practice so the project was seen to have potential benefit to students in enabling faster transfer of skill as demonstrated by research into the use of video modelling. To minimize any discomfort to students, consent to participate and a media rights form was circulated first, to all parents/carers and second, to all students to sign agreeing to the footage being used for presentation, internet and educational purposes. All participation was voluntary and parents/carers or students who did not consent were still included in the teaching of the lesson, but not recorded as part of the video model. All video models produced were positively framed, edited to show students positively demonstrating the behaviour with all behavioural errors edited out of the final video. In the event that any discomfort or distress may have been noted, each school’s PBIS internal coach had oversight of the process and was available for immediate support.

Procedure

Stage 1

VSM training was provided to self-nominated teachers in each school. In School 1, these were two graduate teachers with no knowledge of VSM, and a third an expert teacher in an out-of-classroom role as the PBIS Internal Coach (responsible for the delivery of PBIS training to staff and ensuring fidelity of implementation). The training in School 1 involved face-to-face training that included discussion of VSM, viewing samples of video models, discussion of task analysis (the ability to break down a skill into segments), and learning to use iMovie on iPad by creating a sample VSM.

In School 2, the staff involved in this research were the school’s two PBIS Internal Coaches. The intention at this school had been to provide training only through the use of online tutorials, rather than a face-to-face model.

Stage 2

In each school, data were analysed to identify students requiring targeted or individualized interventions. Each team was given a three-week challenge to create a targeted or intensive VSM/VPM for the identified students. The staff in School 1
expressed confidence and excitement in creating their video models. In School 2, however, where only online training had been provided, the staff contacted the researchers and indicated that they lacked confidence in the quality of the VSM/VPMs that they created and sought and were given more personalized feedback from the researchers. While the participants had thoroughly taught themselves to edit in iMovie, they were unfamiliar with task analysis and had inadvertently created videos that were complex and unspecific; this could lead to an ineffective VSM. The task analysis process was explained in order to create a video that targeted the exact learning point. Both participants were excited at the simplicity of how a skill could be broken down and therefore the targeted behaviour for the video could emerge.

**Stage 3**

The researchers returned to each school video the students viewing these VSM/VPMs for the first time, and to interview the staff and students.

**Stage 4**

The research team gathered video footage in each school across the school week, created a VPM on an expected whole school behaviour, then embedded the teaching of that behaviour into a sample meTV programme to show to staff. The filming involved recording footage that could be included in:

- An introduction to the show using footage of the school and various staff
- A VPM based on a behaviour matrix statement titled ‘We pack up when we are finished’ filmed with the Year 5 students and staff
- A ‘Student of the Week’ awards ceremony, which awards a student with a Certificate and Token shop cards for the outstanding achievement of a school value.

The first two researchers also created a school values jingle and, following teaching of this jingle, students and staff were videoed singing and dancing to the jingle. Various staff were also filmed saying value statements from the expected behaviour matrix, such as, ‘We always listen to instructions, that’s being a good learner!’ for the ‘Listen Up!’, a segment of the meTV show. This was presented at an optional after-school professional development session to teachers, support staff, therapists and the leadership team. With the approval of the staff, this would then be shown to students as a ‘news’ bulletin.
Results

Use of VPM as a targeted strategy

In School 1, one teacher had created a VPM in response to a concern regarding students sharing the space on the oval at playtime. The VPM was created in response to school behavioural data that highlighted challenges on the oval at playtime; more specifically, when a ball from a game entered the play space of a separate group of students playing a separate game. Staff analysed the data and hypothesized that students required re-teaching on what to do when a ball entered their play space. The students who required the re-teaching were selected as the students to be involved in the production of the VPM. Within one week of viewing the VPM daily, staff reported that negative behaviour had reduced significantly and the new skill was acquired and demonstrated in a majority of students.

In School 2, a VPM was created to explicitly teach students how to enter a classroom in a quiet and orderly fashion (lined-up), then to await further instructions. This was highlighted as a need by one of the school’s internal coaches. The VPM was created using Year 6 students, and filmed in a general area of the school, a classroom-based library space. The VPM was embedded in the school’s meTV television show, and shown to students on a single occasion, then at assemblies for six weeks to ensure the minimum 12 minutes’ intervention duration was met. Anecdotally, teachers reported improvements in the key components of the video (e.g. lining up, waiting, entering quietly and then waiting for the next instruction), and that this behaviour was generalized across the school setting.

Use of VPM as an individualized strategy

In School 1, the first VSM was made for a Year 5, a 10-year-old student who was highly distracted when arriving each morning and was taking between 20 to 30 minutes to enter the classroom, unpack his bag, and join the class on the mat. The video simply showed him demonstrating these behaviours with his teacher narrating his actions. All inappropriate behaviours were edited out, such as walking away, talking to friends, wandering around the room and distracting others. The student was initially very excited about his video and enjoyed watching it. His teacher reported that he became self-conscious about the video, and after three views, did not want to see it again. His teacher further reported that the student was now unpacking and ready on the mat within minutes of arriving.
In School 1, the second VSM was for a different Year 5 student who experienced difficulty starting work once instructions were given. The student had become dependent on teacher-delivered prompts, and repetition of instructions. The VSM showed the student using a range of strategies to get help, including looking around at what peers were doing, and asking work partners and nearby students for direction to problem-solve. The student enjoyed watching his VSM and viewed it daily over two weeks. At the end of two weeks, the teacher reported there had been a significant reduction in the amount of times the student sought teacher assistance. With less than 15 minutes of viewing, the student had gone from calling on his teacher for help up to five times a lesson, to finding his own solution most of the time.

In School 2, the first VSM was made for a Year 5 student with organizational difficulties. The student was not coping with packing her bag at the end of the day, frequently lost items, forgot her lunchbox, left notices behind, and did not pack the required homework materials. Her teacher made a VSM showing her working through a series of tags hanging from her school bag that reminded her of what to pack at the end of each day. As each item was packed, the corresponding tag was flipped over. Despite being absent for part of the trial, the student watched the video daily before packing her bag and at the end of two weeks, after less than ten VSM viewings, was fully independent in packing her bag.

In School 2, the second VSM involved a male Year 5 student who was again disorganized in his work folder and materials. The VSM showed him using his pencil case to find his pens, using tabs to turn to the required section of his folder, retrieving the required papers to start work, and filing papers in the correct section of his work folder upon completion. The VSM was viewed daily for two weeks and, when interviewed, his teacher reported that his organization had improved.

Use of VPM as a whole school strategy

In each school, the footage taken during Stage 4 of the project was converted into a meTV show, presented in a live-show recording of a news desk with students as ‘anchors. Two confident students in each school were selected to be the anchors for the show. They had never previously seen an episode on meTV so they were shown a few samples and taught how to run a show. The process of teaching the anchors took less than ten minutes. A visual schedule was used to assist with the order of the show and a teleprompter assisted them to look into the camera and provide instant feedback in the form of a live video-stream.
In School 1, after one take, the students successfully filmed a whole meTV episode, validating the simplicity and accessibility of the process. With much excitement and anticipation, the episode was aired to the Year 5 staff and students, and the school Principal. In School 2, the filming of the meTV episode was considered a highly motivating activity for the students. The school’s PBIS mascots featured throughout the show, and the students’ pride in their values and enthusiasm to create a quality programme was obvious.

Discussion

Feedback from students

After watching the targeted and individualized VSM/VPMs as well as the meTV episodes, students noted the videos provided not only explicit instruction of the expected behaviour, but also advice on how to be a successful learner. The making of the videos was also seen as a positive experience, as it allowed less confident students an opportunity to shine and was considered an engaging activity. One student commented, ‘I think it’s important for other schools to watch this video because it will show you how to show respect and responsibility and how to learn properly at all times’.

Feedback from staff

Both teachers and the Principal in each setting were positive when interviewed about the outcomes from the trial. There was a consistent view that students enjoyed watching themselves perform in the videos, and that the videos were improving the students’ ability to perform the expected behaviours.

Ease of use

While editing of the videos was initially time-consuming, the teachers in both settings indicated the process became simpler the more familiar they were with the software and the process. Collaboration during the creation process was also beneficial, with teachers in each setting working as a team to create and edit the videos. The teachers in School 2 found the tutorials explicit and helpful, although they required additional support with task analysis. When developing their videos, they had the tutorial running on one iPad while using iMovie on a second iPad to create the video.
Benefits for teaching prosocial skills

As staff became more familiar with VSM/VPM, there was a greater reflection on how prosocial skills could be taught using this intervention, and how the approach aligned with the schools’ implementation of PBIS. While initially focused on classroom behaviour, teachers in School 1 also started to consider the benefit of VPMs for playground behaviour, based on data that indicated areas for attention. The staff were already using 10-minute Cool Tools as pre-corrections before students would go out to play. Cool Tools are lesson plans that have been designed to teach students expected behaviours. The Year 1 teachers in particular felt that watching a VPM, or participating in the making of a VPM, was a more powerful pre-correction intervention. More generally, the teachers reflected that the use of VSM and VPM enhanced self-concept, particularly in students who were confident in their ability to display a prosocial skill. The videos also contributed to a stronger group identity, with students proud of their creations, and reinforced by seeing themselves demonstrate the expected behaviours.

In School 2, the teachers were already considering how to use VSM/VPM to teach the focus expectation at the weekly school assembly. The school had also considered the development of an ‘Active Matrix’; an electronic version of the matrix of expected behaviours with embedded video hyperlinks for every expectation. Teachers or students could then click on an expected behaviour and view a video modelling the expected behaviour in the targeted location. The matrix, to be developed over time, could also be customized to show the behaviour in ways suited to children of differing ages and cognitive abilities.

The teachers articulated many benefits of using VPM, with one teacher commenting, ‘They don’t even question that it’s not them doing it. They believe they can do it! Even if you use a stunt double, they don’t see it that way. They see that they are doing it, and that self-belief and confidence that they can do it through a simple video!’ Through using foundation skills that the student already had (as identified by their teacher), editing these into a sequence to show a student capable of demonstrating a pro-social skill in a way they had not been able to do before, enables the student to experience success and contributes to their learning and positive engagement.

Post-trial outcomes

Since taking part in this trial, School 1 has enlisted their Junior Student Council to plan and develop further VPMs based on their matrix of expected behaviours,
with a focus on those areas that data suggest needs urgent attention. These videos have been stored in a shared drive, and each week a video demonstrating the focus behaviour is viewed by all students at assembly and are shown at parent education evenings. Classroom teachers also have access to the videos for initial teaching, and as a precorrection Cool Tool. Additionally, an ‘Active Matrix’ is under development. The school is hoping to run their own television programme eventually, based on the meTV model.

School 2 has also commenced making VPMs for their entire behaviour matrix, and an active matrix is under development. VPMs related to Skill of the Week have been made and are being shown at Whole School Assembly, e.g. Safety in the Playground, and Safety in the Art Room, with the student representative council charged with the role of creating further VPMs. Teachers are being trained in VSM techniques, with VSMs developed as a Tier 2 PBIS strategy for students who require targeted support to develop pro-social behaviours. The school also mentors seven new schools commencing PBIS and have presented the use of VSM/VPM to their mentee schools. The School Parent Council were briefed on the outcomes from the trial, and there is also strong interest in creating a daily television programme similar to meTV.

**Conclusion**

The findings from this trial extend the evidence base for the use of video modelling as a tool for teaching prosocial skills, not just for students with disability but also for their same-aged peers in mainstream schools. This includes a wider trial, currently in progress, to measure the efficacy of the adoption of this approach in mainstream primary and secondary PBIS schools, across Victoria and Australia more broadly. Additionally, work is underway in applying this approach in settings in remote locations with Indigenous learners.

Rapid learning of prosocial skills was a reported benefit, supporting the findings of Bellini and Akullian (2007); Buggey and Ogle (2012); Charlop-Christy et al. (2000); Dowrick (2012); Kahn *et al.* (1990); Kehle and Owen (1990). Teachers reported both VSM and VPM were successful learning interventions in enabling students previously unable to demonstrate a prosocial behaviour to do so after minimal viewings, with students often unaware that a peer had been edited into the video to perform aspects of the skill the student themselves were unable to perform; a finding that supports the work of Buggey (2005) and Burton (2011).
Bellini and Akullian (2007) had noted the benefits of VSM on a student’s self-efficacy, with both students and staff in this trial mentioning that viewing the VSM or VPM motivated the students to believe they were capable of performing the desired skill.

A noted enabler to the uptake of VSM/VPM in this trial was the key role played by the teachers trained in the use of the intervention and, in particular, having someone co-ordinate the creation of videos. This ensured the videos followed a prescribed format, the integrity of the tools created, and the fidelity of their implementation. While the online tutorials offered to School 2 were not sufficient in themselves, particularly in their explanation of task analysis, they provided an important resource for learning. The skills can be taught using online tutorials; however, the presence of a person to motivate and troubleshoot was seen as a necessary ingredient to success. Any expansion of this trial would include a combination of face-to-face learning and online modules, as provided to School 1, with annual updates for schools implementing VSM/VPM as an intervention to teach prosocial skills.

The most exciting evolution of this trial was the creation of the ‘Active Matrix’ concept. This electronic version of the matrix of expected behaviours with hyperlinks to VPMs for each skill will ensure that all students see exactly the same expectation. Future expansions of PBIS in Victorian schools will see schools encouraged to create an Active Matrix, overseen by a trained Video Coordinator. There is an additional opportunity for a large-scale Active Matrix to be created at the Regional, State or even National level, as a way of sharing VSMs and VPMs for common expected behaviours taught at the universal level in schools.

There were some noted learnings that will enhance the meTV programme. Currently being explored are ways of establishing a district/regional meTV programme, webcasting out of a leading PBIS primary school from that region, which is available weekly to all schools within the region via the web (using the proven model of streaming as currently used by meTV Special in Victoria, Australia). Until the point in implementation at which a school creates their own local meTV show, the regional/district show would be used as the school-based television element of this model.

Finally, a future opportunity also exists to examine the concept of “intervention transfer”. In this case, an intervention that has been successfully applied to teaching skills to students with disability in special settings has the capacity to
bridge the mainstream/special divide, with application beyond just students with disability.

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