

How Does Traffic Lighting Influence Pupil Learning?

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Rationale

In Scotland, the use of formative assessment to support individual learners is an integral part of Curriculum for Excellence (The Scottish Government, 2011). Research carried out by Williams and Black (1998) reinforces the usefulness of formative assessment, and in particular self-assessment, in education to help children reflect on their work and identify their next steps in learning. The notion that learners should be more responsible for evaluating their own learning is mirrored in Scottish Education. The 'Building the Curriculum 5 a Framework for Assessment' document highlights the importance of self-assessment in enabling children to evaluate their own work and to promote greater breadth and depth in learning (The Scottish Government, 2011). As self-assessment is considered a valuable learning tool in Scottish Education, this enquiry seeks to further explore the influence which self-assessment has on pupil learning. This will potentially provide learners with the opportunity to review their own work and to inform and improve their future learning.

Aims

The purpose of this practitioner enquiry is to investigate the influence which traffic lighting, a method of self-assessment, has on children's learning during Taught Writing lessons. The enquiry aims to focus on how children use traffic lights to inform their next steps in learning, and to improve their subsequent pieces of work.

Methodology

This enquiry was conducted in a Primary 3/4 class of 21 children over a period of four weeks. Following each weekly Taught Writing lesson the children had to self-assess their work against the success criteria; four of the North Lanarkshire Core Targets for writing. Core Targets were selected for the basis of the enquiry, and self-assessment, to ensure consistency across the different genres of writing being taught.

On completion of a piece of writing a blank traffic light was stamped into each child's jotter and was then coloured in red, orange or green by the child to reflect their overall achievement of the success criteria. To support the self-assessment process the Core Targets were displayed on the board at all times, and the children could use highlighters to help them to identify the achievement of specific targets within their work. To make the results more consistent, and less reliant on each child's ability to self-assess, it was decided that a green

traffic light would be used if all four of the targets had been achieved, orange if two or three of the targets were achieved and red if one or none of the targets were achieved. The children then used their traffic light to generate a next step which was written in their jotter in order to inform their future learning. The traffic light and written comment were referred to prior to starting the next writing lesson.

A variety of quantitative and qualitative data was collected to provide a greater breadth and depth of understanding into the influence which traffic lighting had on pupil learning. Evidence was gathered through informal observations, a pre and post-intervention questionnaire (Appendix 1) and samples of children’s jotter work. Together the different sources of evidence gathered allowed for the comparison of pre and post trends and thus provided the opportunity to effectively evaluate the influence which traffic lights had on pupil learning.

Findings

Pre- and Post-Intervention Questionnaire

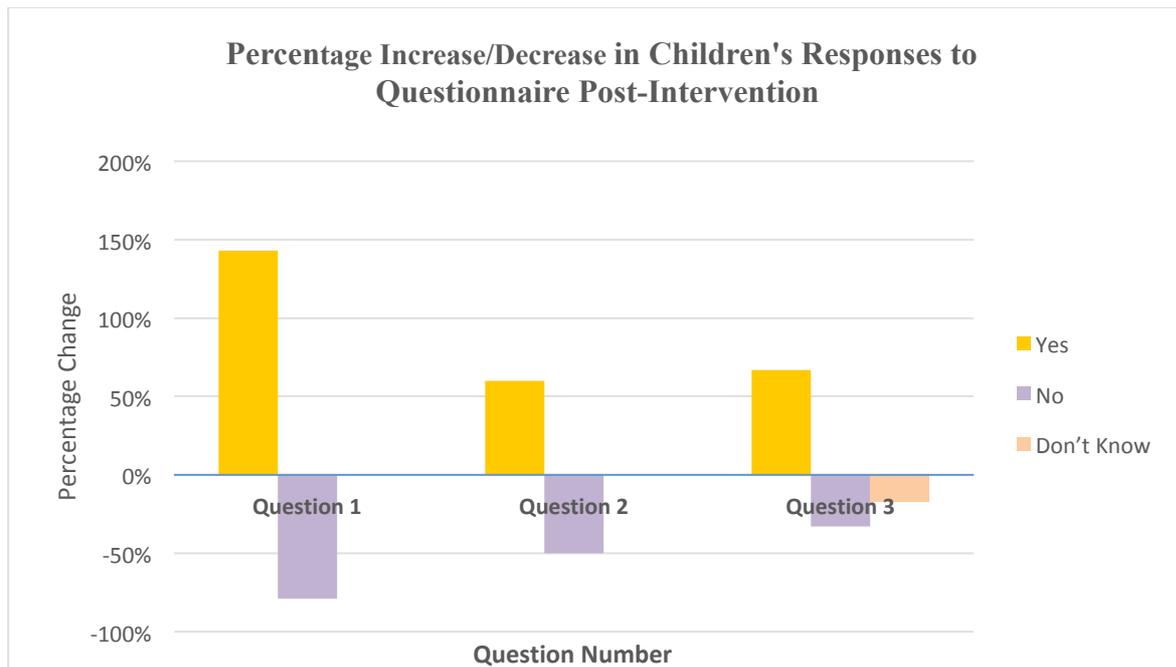
The results of the pre- and post-intervention questionnaire confirmed that children’s opinions regarding the effectiveness of traffic lights as a method of self-assessment increased significantly. Most notably, Table 1 shows the number of ‘yes’ responses to question 1 increased from 7 pre-intervention to 17 post-intervention, an increase of 143%. This shows the children considered traffic lights to have had a positive influence on their learning.

Table 1: Pre- and Post-Questionnaire Results.

	Pre-Intervention Results			Post-Intervention Results		
	Yes	No	Don’t Know	Yes	No	Don’t Know
Q1: Does using traffic lights to self-assess your work help to improve your learning?	7	14	0	17	3	1
Q2: Do you use traffic lights to help you improve your next piece of work?	5	16	0	8	8	5
Q3: Does using traffic lights help you to understand your next steps in learning?	6	9	6	10	6	5

Similarly, the number of ‘yes’ responses to question 2 and 3 also increased following the 4 week implementation period by 60% and 67% respectively (Graph 1). Although the change was smaller, it may indicate that the children were beginning to use traffic lights to understand their next steps in learning and to improve their next piece of work.

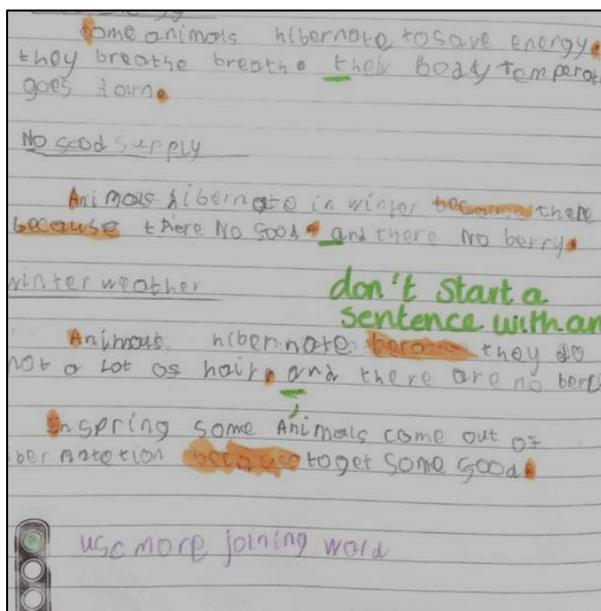
Graph 1



Observations and Samples of Children's Jotter work

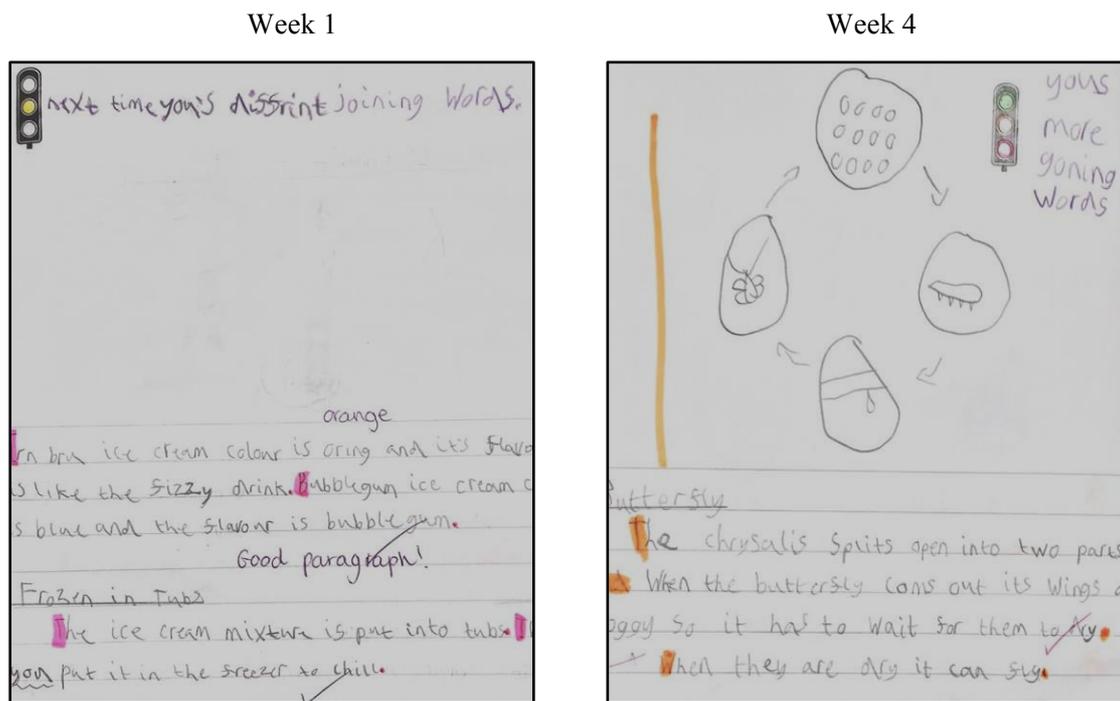
Similarly, a small number of observations and samples of children's jotter work revealed that a number of learners were able to use traffic lights effectively in order to inform their next steps in learning and to improve their following pieces of work. Although some children were successful in using traffic lights to improve their learning within writing, the majority of children did not self-assess their work accurately, tending to always mark themselves highly and did not like to admit their areas for development (Figure 1). After an additional input explaining the importance of honesty, a small number of the children began to reflect on their work more seriously and truthfully, however, not all pupils were fully able to take ownership of their own learning and to create useful next steps.

Figure 1: Sample of Child's Jotter Work



Observations and samples of pupils' jotter work also revealed that although some children were somewhat accurate in self-assessing their work, the next steps they generated through the use of traffic lights were not utilised effectively to improve their subsequent pieces of writing. As a consequence many children's next steps remained the same for consecutive weeks and were often ignored, this resulted in their work showing little or no improvements (Figure 2).

Figure 2: Sample of Child's Jotter Work



Conclusions

The information gathered from the pre- and post-intervention questionnaire, samples of children's jotter work and observations are inconclusive in determining the influence which traffic lighting has on pupil learning. Although the results of the post-intervention questionnaire suggest the use of traffic lights has a positive effect on children's learning, the majority of the evidence gathered through observations and samples of children's work is contradictory. The evidence collected through observations and samples of jotter work revealed that while some children were able to take responsibility for their own learning and become more involved in setting their own targets, this was not consistent across all learners and was largely determined by each child's individual willingness to admit their areas for development and ability to self-assess accurately. Similarly, despite many children claiming to use traffic lights to improve their next piece of writing, this was in conflict with the evidence gathered through observations and samples of children's jotter work, which revealed that the majority of children's next steps were disregarded in their subsequent pieces of writing.

Implications for Future Practice

These results have a number of implications for teachers trying to use this method of self-assessment to improve pupil learning in the classroom. Even though the results from this study are inconclusive, providing children with the opportunity to reflect on their own work and to become more involved in identifying their next steps remains an important part of the learning process. In the future it is crucial that teachers, introducing this method of self-assessment, spend time modelling effective self-assessment before expecting children to self-assess accurately. This will help pupils to become more successful in identifying the assessment criteria and evaluating how well the assessment criteria has been fulfilled. Furthermore, when using any method of self-assessment it is important teachers investigate the quality and accuracy of children's judgements. In order to ensure the results of self-assessments are reliable it is important to consider pupil's honesty and social response bias. It is therefore necessary to create a safe classroom environment where pupils can reveal honest self-assessments or keep their evaluations private if preferred. In addition, for pupils to effectively use their self-assessments to improve their work it is essential that they are provided with adequate time to review their next steps and are taught how to utilise these targets to improve future learning.

Although the results from this study are inconclusive it should be noted that the findings derive from a small-scale case study conducted in one context, meaning that the results may not be generalizable. In the future a study involving a larger sample of participants tracked over a longer period of time would perhaps generate more definitive findings and increase the validity and transferability of the study. This means that further research into the use of traffic lighting as a method of self-assessment would be needed to test the wider applicability and impact of the intervention.

Biography

Black, P. & Williams, D. (1998). Assessment and Classroom Learning. *Assessment in Learning*, 5(1), pp. 7-71.

Scottish Government. (2011). *Curriculum for excellence building the curriculum 5 a framework for assessment*. Edinburgh: Scottish Government.

Appendix 1: Pre- and Post-Intervention Questionnaire



Traffic Lights Questionnaire



1. Does using traffic lights to self-assess your work help to improve your | learning?

Yes	No	Don't Know

2. Do you use traffic lights to help you improve your next piece of work?

Yes	No	Don't Know

3. Does using traffic lights help you to understand your next steps in learning?

Yes	No	Don't Know