Making learning visible in Health and Physical Education

Teachers' stories

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KEY POINTS

- Teachers at Hobsonville Point Secondary School focused on making learning visible to give their priority learners more ownership of their learning.
- The teachers designed and implemented a range of action-oriented strategies to make learning more visible as part of a Teacher-led Innovation Fund project.
- Involvement in this project led to shifts in teacher practice and improvements in student learning.
- At the end of the project, the teachers and teacher educators involved reflected on their key learnings and were left with important questions relating to the challenges of making learning more explicit and visible.

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Over a 3-year period (2016–19), four Health and Physical Education teachers from Hobsonville Point Secondary School embarked on a project aimed at making learning more visible for their priority learners.[1] With support from the Teacher-led Innovation Fund, the teachers worked with a group of critical friends—teacher educators, a visible learning expert, and Māori advisors—to develop and implement a range of innovative strategies to make learning more visible. This article backgrounds the project, presents the teachers' stories and provides an outline of visible learning strategies they developed for use with their learners. The article concludes with the writers' reflections on the challenges and questions that remain in relation to making learning more explicit and visible for learners.

A brief overview

Why did we engage in this project?

Hobsonville Point Secondary School (HPSS) is a recently established school which offers three school-specific curriculum strands: Learning Hubs, Project Learning, and Modules. Modules comprise of one or two learning areas. The school has developed a learning design model to provide a common language across these strands to make learning visible and to encourage metacognition in students. The learning design model outlines seven key learning verbs[2] which teachers use to develop learning objectives for lessons, units, and modules. Unit rubrics are a common tool for assessment of student learning against unit learning objectives with corresponding success criteria at three different levels of proficiency (see Figure 1). Students are encouraged to use these rubrics to set learning goals and to monitor their progress. Despite the use of this school-based model and rubrics as a common tool, an examination of our own practice as teachers of health and physical education (HPE) found that there was still only superficial and inconsistent use of strategies to make learning visible among us. Analysis of the achievement of our priority learners revealed that a number were not achieving at the expected level in HPE. Conversations with our priority learners also revealed a perception that HPE was more about "doing" rather than "learning" and therefore we were left wondering:

- Could students tell us what they were learning?
- Could students tell us how they were learning?
- Did we, the teachers, know what students were learning?
- Was the health and physical education learning visible in our integrated modules?

Our Teacher-led Innovation Fund (TLIF) project was motivated by a desire to make the learning more explicit for our priority learners in order to improve their achievement[3] in HPE and to give them the tools to take more ownership of their learning.

What is visible learning?

John Hattie popularised the concept of visible learning following a 2008 meta-study on what made the most significant difference for student achievement. Hattie (2009) concluded that making teaching and learning visible had the most significant impact on student learning. Visible learning is an approach to teaching and learning where students and teachers work together in a learning partnership (Mahuika et al., 2011) to attain the achievement objective, provide feedback, and ascertain whether the student has been successful. Visible teaching and learning is said to occur when teachers see learning through the eyes of students and students see themselves as their own teachers.[4] Hattie (2012) suggests that the greatest effects on student learning come not only when the students become their own teachers (through self-monitoring, and self-assessment), but when the teachers become learners of their own teaching. When teaching is made visible, the teacher finds out what the students are learning and uses this to evaluate the impact of their teaching, subsequently using this to inform the decisions they make in order to have the most positive impact on student learning (Hattie, 2012). We use the phrase "know thy impact" to encapsulate this directive. When learning is made visible the student knows where they are at, where they are going, and what their next steps are.

Figure 2 (Cognition Education, 2014) presents the capabilities of a visible learner surrounded by teachers and a school community.

How did we organise the project?

To support teachers in making learning visible for their priority learners, we implemented an action research process using critical friends within a small community of practice. As part of this process the teachers engaged in a shared spiral of inquiry (Timperley et al. 2014) and the project team met at least twice a term for the entirety of the project. The teachers presented the project aims to the full HPSS staff and recorded professional discussion in department meetings that related to the project aims. To further support the teachers in the project to reflect on their practice, ongoing dialogue between the teachers and the teacher educators was facilitated through the use of a Google+ page. Links to visible learning resources and professional readings were also made available there.

The teachers and teacher educators quickly realised that to successfully evaluate teaching practice they would need to establish a shared baseline and a common understanding around visible learning in practice. In order to achieve this they co-constructed a Visible Learning Rubric for Teacher Practice (VLTP rubric) with the assistance of a visible learning expert. The rubric outlined the criteria for using visible learning at different levels of proficiency and included elements from the culturally responsive Relationship-based Learning and Leadership Profile (Bishop, 2017). This aligned with the department's focus on whanaungatanga at this time. Figure 2 helped the teachers to

FIGURE 1. RUBRIC: SKILL LEARNING

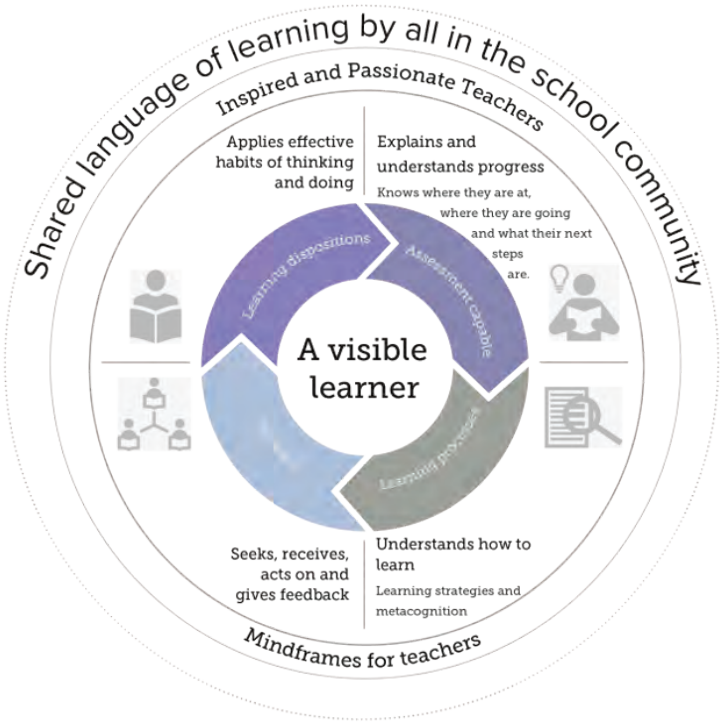
Learning objective: To **make sense** by understanding how we learn physical skills

Qual 1	**Qual 2**			**Qual 3**
6P	7D	7P	7A	≥8
Apply knowledge of biophysical principles to explain movement in a range of contexts.	Apply relevant knowledge of biophysical principles and **explain** how/ why it enhances physical skill learning.	Apply **relevant** knowledge of biophysical principles and **explain in detail** how/ why it **enhances** physical skill learning.	Apply relevant knowledge of biophysical principles and **evaluate** how/ why it enhances physical skill learning.	Apply relevant biophysical principles & sociocultural factors, analyse in-depth, and evaluate how they enhance physical skill learning
	Relevant knowledge of biophysical principles: • Sport psychology • Anatomy & biomechanics • Skill learning theories, such as: – Feedback – Skill acquisition			

Links to NCEA Achievement Standard PE 2.2—see Assessment Material.

Notes: • Numbers refer to curriculum levels, where '7' means curriculum level 7.
• Letters next to the numbers (as in 7D, 7P & 7A) denote the curriculum sub-levels, D for **D**eveloping, P for **P**roficient, and A for **A**daptive.

FIGURE 2. OVERVIEW OF A VISIBLE LEARNER (COGNITION EDUCATION, 2014)



conceptualise what they wanted their priority learners to be able to do. Early on in the project each teacher used the rubric to set a specific goal to improve their teaching practice.

The VLTP rubric was also used by the teacher educators to conduct three teaching observations of each teacher. After each observation a meeting was held between the teacher and a teacher educator to discuss where they were at in relation to the specific visible learning goal they had set earlier. Teachers used feedback from the rubric and the teacher educators to design, trial, and evaluate ten individual and five school-wide visible learning strategies.

In the next section we present the teacher learning narratives, developed using data from observation meetings and notes taken in collective discussions, and subsequently reviewed by each teacher for accuracy. Each story outlines one of the visible learning strategies the teacher designed and implemented. Links to videos of the teachers discussing their stories have been included as well as hyperlinks to some of the resources they used. The teacher's real names have been used.

Teacher stories and strategies

Tome's story

(https://youtu.be/SoX4tnF9voA)

Tome is an experienced teacher who believes in the power of relationships as a basis for student learning. He came into this project motivated to develop action-oriented strategies that might support students to reflect on where they were at with their learning.

Strategy: Good, Great, Awesome

Tome was concerned that learning objectives and success criteria were not always accessible to his Year 10–11 learners. He designed Good, Great, Awesome in order to support his students to understand the information in the unit and lesson rubrics so they were better equipped to evaluate their own learning.

The key steps Tome took to implement this strategy were:

1. Checking the existing unit rubric for student-friendly language. In doing this Tome ensured any subject jargon was clarified, and then replaced the rubric levels with the words Good, Great, Awesome. The unit rubrics were then shared with students in the first lesson so they could identify their learning goals for the subsequent weeks.
2. Creating a Kahoot[5] Quiz to encourage students to engage with the learning objectives and content from the rubrics right at the beginning of the unit. The results of the quiz provided useful feedback to Tome about how much his students had understood about the learning objectives.
3. Sharing lesson learning objectives and Good, Great, Awesome success criteria with the students at the start of each lesson.
4. Revisiting the success criteria at the end of each lesson and asking students to self-evaluate where they were at. On occasion Tome would also ask the students to write their names under Good, Great, or Awesome on their way out the door so that he was aware of where the priority learners thought they were at.

Reflection

Tome believed the steps he designed in the Good, Great, Awesome strategy were successful in supporting his students to understand the unit rubric, what stage they were at in their own learning, and also to communicate this information back to him. He noticed that one priority learner who was previously disengaged with the learning was beginning to actively seek feedback. When Tome engaged in learning conversations with this student they were also able to articulate what they thought they needed to do to improve which was encouraging.

It was important to Tome that all students perceived some level of success with their learning when they self-evaluated using the rubric and he achieved this by ensuring that the lowest level of the success criteria was still described as "Good". Tome engaged in dialogue with the students to develop next steps feedback to help progress their learning from "Good" to "Great" or "Awesome". However, Tome also noted that one student felt demotivated by a next steps feedback approach. The student explained to Tome that the ongoing feedback made him feel frustrated, like he was never done and his work was never good enough.

Natasha's story

Natasha led this research project and brought a deep reflective thinking approach to how it could develop individual and collective teacher practice for the benefit of the students' learning. Her teaching background provided many opportunities to think "outside of the box" which enabled her to challenge assumptions and encourage a range of perspectives in this project.

Strategy: Dialogue supported by a rubric

Natasha wanted to understand where her learners were at with their learning and how they used the unit rubric to self-assess and self-monitor their progress. She decided to use one-on-one learning conversations supported by the unit rubric[6] to initiate dialogue about each learner's progress so they could judge where they were at, provide feedback and set next steps together.

The steps Natasha took to implement this strategy were:

1. Setting a practice task for students to complete and share with her. Asking students to judge their work against the unit rubric.
2. Making time to meet with each priority learner one-on-one and asking open-ended questions such as:
   - Could you tell me about your learning in this unit?
   - How did you find the task?
   - What interested you and where did you get stuck?
3. Asking the student questions to determine how they used the rubric. Questions such as:
   - Using this practice task, where do you think you are at on the rubric?
   - Do you think this reflects your level of understanding in this unit? Why? Why not?
   - What does this (learning verb in the rubric) mean? What might that look like in this unit?
   - How do you think you could show this level of understanding effectively?
   - What do you think the next level might look like?
4. Relaying back to the student what she heard, highlighting evidence of their learning, and clarifying what the rubric was trying to say. Mutually agreeing where the student was at on the rubric.
5. Discussing what the learning could look like, how it could occur, and setting a direction of where they were going. Identifying next steps for the student and teacher.

Reflection

Natasha found that dialogue supported the student and teacher to identify where the student was at with their learning beyond the capabilities outlined in the rubric. It provided an opportunity to judge the student's awareness of their learning (metacognition) and to understand the student's motivations, struggles, and preferences.

Through dialogue Natasha could understand what students needed and co-construct success criteria that aligned with and surpassed the rubric, setting learning goals around HPE and visible learner capabilities. By understanding each student better Natasha was able to identify and plan for content and contexts that were meaningful and more relevant to them. Furthermore, she could plan to support students to show their learning in ways that suited them. For some students this strategy was beneficial and was repeated throughout the unit. It enhanced their confidence and engagement leading to them becoming more assessment capable and moving in the direction they set with Natasha. In these cases the rubric became a tool for focusing and guiding their progress. However, for other students, the predetermined success criteria in the generic rubric were discouraging and the dialogue about it may have reinforced this effect. Natasha realised that it was important to understand where a student was at before suggesting where they were going. This one-on-one targeted approach with students could enhance or diminish a learning relationship. This strategy took a lot of time to implement; consideration would need to be given for how to apply it effectively for a large number of learners.

Elizabeth's story

(https://youtu.be/Lc08UbrM6N4)

Elizabeth was a newly registered teacher working to develop the skills of teaching. While she did not have the depth of experience of the other teachers, she had an open mind uncluttered by past experience. Her goal focused on ways of ensuring that students had a sense of ownership over the learning objectives and success criteria that were used in her class.

Strategy: Co-constructing success criteria

Elizabeth believed it was important that her Year 9–10 students had a clear idea about what they were learning and how they were going to learn about it. She also wanted them to know if they had been successful in meeting the unit learning objectives. Early in the project, Elizabeth came to realise that the students were more engaged and had more ownership of their learning if they felt they had a say in where they were heading. She moved from presenting predetermined success criteria to supporting students through a process where they became more involved in the co-construction of their own success criteria.

The steps Elizabeth took to implement this strategy over a number of lessons were:

1. Presenting the unit learning objectives' success criteria to her students.
2. Referring back to the learning objectives more consistently on resources that she shared with the students, highlighting key learning verbs from the school's learning design model.
3. Providing the lesson learning objectives at each lesson.
4. Working with the class to co-construct success criteria together. She did this by getting the students to brainstorm what the learning objective might look like, sound like, and feel like if they had been successful at meeting it.

Reflection

Eventually some students were able to construct success criteria for themselves. Although some students still needed guidance to construct the success criteria themselves, Elizabeth felt that encouraging co-construction helped the students to understand what success looks like for them. This strategy also allowed some students to differentiate their own success from their peers. Instead of one learning objective, one set of success criteria, and everyone having to fit the same learning, Elizabeth started to support the students to personalise the learning in a way that was meaningful to them. Through dialogue they were able to identify what content and goals engaged each learner and how they liked to learn; for example, through practical experience, or by watching videos. She found that students came to understand where they were going instead of relying on the teacher to tell them. She also believed that the use of this strategy led to students having greater agency and a sense of ownership over their learning.

Although Elizabeth hoped that students were using the success criteria to check their progress along the way, she later reflected that an exit-slip posing a question for students to answer on their way out of the lesson may have better enabled her to gauge their level of understanding. She noticed that it is easy to make the assumption that students were learning because she felt that she had taught them. Elizabeth was reminded to regularly evaluate the impact of her teaching. She realised that although her students had developed a clear idea about what they were learning and what it might look like, they were not necessarily monitoring their progress nor able to set and action next steps independently.

Jayne's story

(https://youtu.be/0-GpH2BL3ew)

Jayne is an experienced teacher who is both a HPE teacher and a Careers Advisor. She came into the project with strong leadership skills developed in her previous role as a HOD. She enjoyed the challenge of engaging in further learning with a different focus.

Strategy: Developing student feedback capability

Jayne was interested in developing assessment-capable students (see Figure 2) to give them more ownership of their learning. She could see the value of her Year 12 health students knowing what the expected level of learning might look like and being able to take a more active role in knowing how to improve their work. She wanted students to be able to take more ownership of their learning by developing the skills and knowledge to self and peer assessment so they were able to identify what they needed to do in order to improve their work. She knew that such skills would be invaluable in Year 13 and in any further study they might undertake.

Jayne's strategy was to support students to be able to mark NCEA material themselves and provide explicit feedback to their peers. A shift in her practice was ensuring an explicit focus on developing the knowledge and tools for sudents to be able to do this.

The steps Jayne used to develop student's ability to give, receive and act on feedback were:

1. Providing exemplars for Achieved, Achieved with Merit, and Achieved with Excellence, and encouraging the students to identify which grade they thought the sample was at and why.
2. Unpacking the standard and encouraging dialogue with and among students about why a piece of work was an Achieved and not an Achieved with Merit or Excellence, to help students clarify expectations on what the learning might look like.
3. Teaching the students a coding system for self and peer marking and supporting them to provide self and peer feedback.
4. Developing a 16-point checklist with students which could be used to code and assess student work. Jayne used these codes to mark the work and the students used the codes to identify the strengths and gaps in their work. The students also shared their work with a partner and provided peer feedback using the codes.

Reflection

The strength of this strategy lay in the learning dialogue that developed between the students as they gave each other feedback. This resulted in specific ways they could improve and refine their work. One student explained that the process had "given me an idea of what to think about to push myself to the next grade level". Students commented that it supported them in refining and developing more in-depth answers that did not require reliance on their teacher.

Jayne was surprised at the richness and learning focus of the dialogue between students that resulted in clear strategies for next step learning. She could see the value in students being able to share their ideas and perspectives and being able to develop the tools to self and peer assess. She felt that such a process also encouraged the students to become more self-regulating.

Key learnings and wonderings

At the end of the project the teachers and teacher educators came together for a final debrief. The following discussion continues the teachers' stories—it is a reflection on the key learnings and wonderings they were left with.

Visible learning was a reflective and action-orientated approach that enabled the positioning of teachers and learners as partners. It provided a common way for them to think about teaching and learning, to see and understand the learning occurring and to plan for further learning. The strategies used by the teachers, as identified in the stories, appear to have helped make learning more visible for the priority learners, as students engaged in informed dialogue about their own learning. In line with recommendations by the Education Review Office (2012) for priority learners, the teachers' practice became more student-centred and responsive to offer more personalised learning, with content, assessment and learning approaches that suited students' strengths, interests, and needs.

By engaging with the VLTP rubric the teachers were able to experience being visible learners themselves and felt they developed some empathy for their students, as they recognised students may also be overwhelmed when presented with the learning objective rubrics and success criteria in language that was not accessible. In developing more succinct HPE learning objective rubrics, teachers were able to communicate a clear direction for the learning and a platform for personalising a responsive curriculum for each priority learner. While the rubrics started as a resource for the teachers, through dialogue they became a tool for the teachers and students to use together, to make teaching and learning visible. The rubrics supported diverse conversations and grounded dialogue between students and teachers while they explored what content was relevant to the students and how they might show their learning. These conversations centred around three questions inherent in the visible learning approach. These being: "Where am I at?", "Where am I going?:, and "What are my next steps?". The teachers' strategies to make learning more visible enabled students to answer one or more of these three questions, independently or with their teacher. The learning objective rubrics were therefore a tool to focus reciprocal feedback between student and teacher. When students could see their learning, they engaged in, even initiated, dialogue with their teacher and/or peers which led to discussions on how learning was occurring and what would be the next steps for learning. Through dialogue the teachers were able to model to students how to use the three questions to understand their progress. This helped the students to develop their metacognition and become more assessment capable (Cognition Education, 2014). The teachers valued the clarity provided by the rubrics as they felt more confident to use a wider range of evidence to assess student learning. Evidence collected from one-on-one conversations with students supported the teachers to know where students were at in relation to the rubrics and to plan for student learning (Education Review Office, 2012) that was likely to have a positive impact.

This approach was not without issues—at times the explicit focus on how to make progress appeared to be demotivating for some students. While being clear about the direction of the learning enabled teachers to keep track of and support flexible diverse student learning pathways, for students who could not see how enhancing the set capabilities might serve them—or someone they care about, now, and/or in the future— this appeared to impact on their decision to engage or not. The teachers wondered if student learning was limited by the teachers' views of success and what could be captured explicitly in the rubric? This left teachers wondering how the visible learning questions might help students to realise and share what success meant to them, and how the teacher could use them to understand the emotional needs of students better, and in doing so enhance engagement in learning. Going forward the teachers have discussed how they might ask:

- "where are you at?"—to understand the student's engagement and motivations, their visible learner capabilities, as well as their progress according to the learning objective rubrics, i.e. HPE capabilities.
- "where are you going?"—to understand the student's aspirations within and beyond school as well as an understanding of what success means to them and how that relates to the learning objective rubrics.

Furthermore, there was implicit learning that was valued but was hard to see and hard to measure. As teachers continue to reflect on their own learning, they are now working to understand how they could ensure this implicit learning was considered when designing learning opportunities for students.

Overall, the teachers in the project felt they had experienced a shift in practice. However, they realise that understanding learners' needs and the impact they have as teachers is an ongoing journey. The Visible Learning Rubric for Teacher Practice will continue to be a useful resource for developing the teachers' practice through progressive levels towards reciprocal teacher–student learning partnerships in a visible learning approach. It is aspirational and focuses on what teachers and students can do. It includes aspects of Russell Bishop's relationship-based teaching and leadership profile where teachers are presented as "leaders of learning" who deepen their understanding of how to create relational contexts,

interact effectively and monitor progress (Bishop, 2017).[7] Moving forward, to highlight the interdependent roles within the student–teacher partnership, the teachers will be encouraged to think about the following modified questions: Where are we at? Where are we going? What are our next steps?

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Notes

1. According to the Ministry of Education (https://nzcurriculum.tki.org.nz/Priority-learners), priority learners are groups of students who have been identified as historically not experiencing success in the New Zealand schooling system. These include many Māori and Pacific learners, those from low socio-economic backgrounds, and students with special education needs. (Education Review Office, 2012). In this project priority learners were defined as students who identified as Māori or Pasifika or had low levels of literacy or numeracy, and were not achieving at the expected curriculum level for their year level in health and physical education.
2. The seven key learning verbs in the "HPSS Learning Design Model" are: Focus, Refine, Test, Explore, Make Sense, Generate, and Evaluate.
3. At the conclusion of the project, school data revealed that the number of priority learners who were achieving at or above the expected level in health and/or physical education was 40% higher than at the start of the project. But this is not the focus of this article.
4. https://visible-learning.org/
5. A Kahoot Quiz is a free e-learning tool that teachers can use to create quizzes. Students are provided the link to the quiz and can complete them on their devices in real time: https://kahoot.com/
6. This department developed unit rubric related to one learning objective that was the focus for a unit which lasted about a term and also related to an NCEA Achievement Standard.
7. The VLTP rubric could be revised to align more closely with the terminology used in the visible learner diagram (Cognition Education, 2014) to provide a more coherent direction for teacher learning and practice.

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