Evaluating your school’s implementation of digital technologies.

Steve Knowles
Griffith University

Abstract

Starting with a 'new' perspective on what qualifies an implementation of digital technologies as successful, this paper outlines a process developed through a design research project whose aim is to support and improve the professional practice of schools' leaders, advisors and consultants in ICT. In particular, the aim of the research is to facilitate the move away from technology-centred implementations to more empowering, user-centred implementations that are personalised to each school's particular way of doing school - and to do so by designing and refining a formative, holistic process that a school can use to evaluate and develop its implementation.

The evaluation process makes use of both qualitative and quantitative methods to draw out a picture of how the school 'does school', and then compare that to a similar picture of how the school's implementation of digital technologies 'does ICT'. Of primary importance in this process is the value and respect it affords teachers as professional pedagogues. While it does not expect teachers to be experts in using ICTs, it credits them with the competence to assess the extent to which the school's implementation is empowering them as they carry out the core business of the school – teaching and learning.

Other significant features of the process are the emphases on full-staff participation, on obtaining both group and individual data, and yet on minimising the disruption to the school's teaching schedule.

If, as suggested in the companion paper for this conference, we need to redefine the success of a school’s implementation of digital technologies (IDT) in terms of user empowerment, and particularly in terms of its user-centredness and the extent to which it is personalised to the way that the school does school, we also need the school to be able to evaluate that implementation using those same criteria. A central aim of the research from which this paper is drawn was therefore to conceptualise, design, develop and refine a formative evaluation process that schools could include in their repertoire of professional practice to help them meet this need. This paper describes the process that was developed by that research.

A new process – Overview

A formative evaluation process is never going to be a quick ‘tick-and-flick’ survey – to do justice to such a complex, high-stakes situation it is always going to be a major project for the school. However, if it is going to be used, it also needs to be do-able within the constraints of a very busy school program. This new process, represented graphically in Figure 1, was therefore designed to be a relatively compact ‘event’, that minimises the disruption to the school’s regular activities, the intrusion by the facilitator, and the time-commitment per staff member. At the same time, it was also designed to maximise the school’s participation, ownership, and benefit from the process. Throughout the whole process, the professional learning goals for the school are two-fold: (i) to become more focused on the need for their IDT to be user-centred rather than technology-centred, and (ii) to become more experienced and skilled in carrying out such a user-centred, holistic process. The overall task for the school is to (i) construct well-grounded ‘big pictures’ of how it does school, how it does ICT, and how it has been developing its IDT, then (ii) compare and contrast those pictures, highlighting the alignments, and misalignments, especially between the way the school does ICT and the way it does
school, and finally (iii) develop and put into action plans to capitalise on and extend the strong alignments, and begin remediating the significant misalignments.

Coincidentally, the process is also carried out in three stages, though they do not directly correspond to the three steps listed in the previous paragraph. The three stages consist of two periods with the facilitator on-site – Stage 1 lasting five to six days, and Stage 3 lasting no more than two days – separated by Stage 2, a period of at least two weeks with only minimal contact (remotely) from the facilitator.

Stage 1, the first period with the facilitator on-site, involves the school in describing itself, its existing IDT, and the way it has been developing its IDT – primarily through focus groups. This is supplemented by facilitator observations and discussions, and a review of the school’s relevant policy documents. While intensive for the facilitator, who runs the focus groups, this period is only minimally so for the school. Each staff member takes part in a 40-minute full staff meeting on the first day, plus one of a series of 90-minute focus group sessions that are scheduled throughout the remaining days. For the vast majority of staff these are their only formal commitments during the first period – though informal, ad hoc conversations with the facilitator over morning tea or lunch, or during other breaks, also take place. For any staff member who is on the Task Force (Patton, 1997), their commitment to the 90-minute focus group session is replaced with a half-day Task Force session before the focus groups begin.

Stage 2 is a period of at least two weeks without the facilitator on-site. During this period, the only commitment from the school is to an online questionnaire (60 to 90 minutes) by each staff member, at a time of their own individual choosing. In combination with the focus groups in Stage 1, this is when the total pedagogical expertise within the school is brought to bear on the evaluation of its IDT. The length of time allocated to this stage provides:

- several days for the facilitator to extract the main themes from the focus group data, plus the other supplementary data sources, then use them to construct the school’s online

Figure 1  Professional practice – a school formatively evaluating its IDT

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Stage 3, the second period with the facilitator on-site, is very intensive for the Task Force group, but only minimally so for the remainder of the staff (only a 60-minute full staff meeting). An intensive half-day Task Force session reviews the data summaries, uses them to devise plans for improving the IDT, and decides on the structure for a presentation of those plans to staff. A delegation from the Task Force group is then commissioned to finalise the presentation materials, and the whole group presents the plans to the full staff meeting the following day.

As this overview of the structure and time commitments indicates, this process is complex and comprehensive – in the sense that it involves the whole of the school’s staff, addresses a number of very large, complex entities, and does so at a holistic level. And yet it is still reasonably compact, and undemanding of most individual staff member’s time.

The remainder of this paper provides a detailed description of how this is achieved. Since the process has been designed to support and improve the professional practice of schools’ leaders, advisors and consultants in ICT, this description is presented as a detailed ‘walk-through’ to enable these potential facilitators to develop a feel for their role in the process, and particularly an understanding of how the emphases on user-centredness and personalisation work out in practice.

Preliminaries – Setting the scene

In the weeks before the facilitator arrives for the first stage, the school leadership informs the school community of the upcoming evaluation – especially emphasising the focus on full staff involvement. It also creates its Task Force group, schedules the sessions for Stage 1, and calls for student and parent volunteers. In discussions with the school leadership leading up to the start of Stage 1, the facilitator emphasises that the school needs to see this process as their task, a new element in their ongoing professional practice, albeit initially guided and assisted by the facilitator.

The Task Force group is created on the basis of two main criteria. On the one hand, it needs to consist of those who are responsible for and/or interested in seeing the evaluation’s results put into practice. On the other hand, it needs to reflect the school’s decision-making style. For example, in a school with a strongly hierarchical decision-making style, the Task Force will most likely consist of executive staff or their delegates. At the other end of that continuum, in a school that has, or desires, a highly democratic decision-making style, the Task Force could consist of representatives from all sections of the school community, including parents and students.

A 40-minute full staff meeting is scheduled as the first official event of the evaluation process. This is to be followed by the first half-day Task Force session. The focus group sessions are then scheduled across the remaining days of Stage 1 to ensure that every staff member participates in a group. In some schools, focus group sessions are scheduled by focusing on, and collating, the teaching staff’s non-teaching times, including lunch & other breaks. The main concern with this approach is the imposition on preparation, marking, and recuperation time for teaching staff. In other schools, release time is organised for teaching staff, to allow scheduling of focus groups in their teaching times. Despite the apparent benefit to the teaching staff, this approach also meets with resistance at times, since experienced teaching staff often find preparing for release time more demanding than preparing for their own teaching. It also adds a significant financial cost (for relief staff) to the project.

Finally, in the week prior to the start of Stage 1, the school calls for parent and/or student volunteers for focus groups and/or the online questionnaire. As with most activities within this evaluation
process, the decision about parent and/or student involvement belongs to the school. While schools can, and typically do, mandate staff participation in such processes, they are also very aware that obtaining genuinely representative perspectives from students, and especially parents, is quite difficult. As a result, parental involvement is typically expected to be unrepresentative of the parent cohort, and most schools expect that student involvement, especially when mandated, will be typically tokenistic.

**Stage 1 – Constructing initial pictures**

The first stage consists of four main activities. It commences with a full staff meeting to provide opportunity for the staff to understand and appreciate their role and value in the process, and to establish a rapport with the facilitator. This is followed by a Task Force session to enable the Task Force members to preview the evaluation’s component processes, to carry out their own focus group session, and to discuss how they might put the evaluation results to use. The bulk of Stage 1 then consists of a series of focus group sessions to enable every staff member to be involved in the group construction of a number of pictures, or maps, to describe the school, its IDT, and the way it has been developing its IDT. During breaks between the scheduled focus group sessions, the facilitator also informally observes the school in action, and participates in ad hoc discussions over morning tea or lunch, or as other opportunities arise.

**Orienting & engaging**

The first scheduled session of the evaluation is a full staff meeting. The main purposes of this session are to lay a foundational understanding of the role and value of each staff member in this process, and to establish an initial rapport with the facilitator. The facilitator outlines the perspective that is designed into the process, placing particular emphasis on the need to be user-centred rather than technology-centred, and personalised to the way each school does school, rather than ‘one size fits all’. This staff meeting, as with almost all of the processes in which they are involved in this new professional practice, is also a professional learning activity for staff. In this particular case, it is an example of the orienting/engaging stage of any learning activity. It confirms and builds on what the staff already know about their role in the school; and it challenges them to begin ‘thinking outside the box’ – firstly about how ICT should be implemented in a school, but also about their own role and value in that implementation process, and especially in the process of assessing its effectiveness in empowering teaching and learning.

**Leadership development**

The full staff meeting was to lay a foundational understanding of the role and value of each staff member in the evaluation process. The next step is for the Task Force group to take up responsibility for ensuring that the evaluation outcome is an implemented plan of action for making the school’s IDT more empowering to its core users. The group’s first session previews the evaluation’s component processes, including carrying out their own focus group session, and looks at how they might put the evaluation results to use. The facilitator initially leads, and then guides this first Task Force session, but also moves to place the responsibility for the evaluation’s outcome firmly in the hands of this group as they begin to lead the school as a whole through the process.

As well as developing some insights into the overall evaluation process, its sub-processes, the Task Force members’ role within it, and the major task that awaits them in their second session, this first Task Force session also serves as another professional learning activity for these leaders in their movement towards a more user-centred, personalised approach to the way that their school develops its IDT. Typical of any truly constructive, learner-centred activity, it consists of authentic, practitioner-centred tasks, scaffolded by a more experienced practitioner whose goal is the ongoing professional learning of its participants within a supportive, collaborative learning community. The next step is to move on to the vast majority of the staff who have the more foundational responsibility of evaluating the effectiveness of the IDT in empowering them in their work.
User central

As the evaluation moves its focus from the evaluation leaders to the professional users of the school’s IDT, the need especially to bring the total pedagogical expertise and local knowledge within the school to bear on the evaluation of the IDT requires that the perspectives, observations, and experiences of each and every staff member are given voice and credence. The focus group sessions constitute the first step in that process, by creating an environment where staff can engage in an important and highly-valued, yet relaxed and collegial group discussion about the most prominent characteristics of the way their school does school, the way it does ICT, and the way it has been developing its IDT. A new technique was developed for the focus groups that provides such an environment. It also uses a simple set of ICTs to capture those characteristics into a series of pictures, or maps\(^1\), of the way that the school does school, the way it does ICT, and the way it has been developing its IDT, that will be used later (during the second Task Force session) to build and reinforce a user-centred, ‘big picture’ perspective of those three entities.

The focus group sessions constitute one of the central elements of this evaluation process, by ensuring that the perspectives, observations, and experiences of each and every staff member are given voice and credence, and thereby providing opportunity for increasing staff ownership of the process. Such intensive group work also serves as a professional learning activity for staff, as they discuss their perceptions of the school, its IDT and the way it has been developing its IDT, negotiate suitable labels for each characteristic of the school, and begin to compare and contrast the way the school does ICT with the way it does school. Not only have they begun the authentic work of formatively evaluating their school’s IDT, they are also starting to learn what it means for an IDT to be user-centred and personalised to the way a school does school.

Informalities

Between focus group sessions, the facilitator takes the opportunity to informally tour the school, unobtrusively observing the school in action. Informal ad hoc conversations with staff occur quite naturally over lunch and morning tea, and at other times as the opportunities present themselves. These two informal activities provide the facilitator with a broad background for the school’s evaluation process, but also occasionally highlight aspects of the way the school does school, and the way it does ICT, that do not arise within the focus groups. Depending on the emphasis that these aspects receive in the informal discussions, or their prominence in the facilitator’s ‘outsider’ observations, these may be used to supplement the information drawn from the focus groups in later stages.

In addition to these four main activities, within schools that have policy documents relating to the implementation of ICTs, and to their use within the school, those documents are analysed for the most prominent themes using text analysis techniques. Distilling the central themes of these documents provides an indication of the official position of the school in these areas. Since the principal concern in this analysis is simply to obtain the most prominent themes within the documents, and to do so within a limited time span, text analysis software such as Leximancer is used to carry out this simple analysis on digital versions of the documents.

Stage 2 – Delphi-style feedback

Stage 1 has been carried out entirely on-site, over a period of five to six days. The second stage consists of three main activities that are successively carried out over a period of at least two weeks, and without the facilitator needing to be on-site at the school. It starts with a thematic analysis of the

\(^1\) At http://steveprint.blogspot.com, link ‘A’ is to a video of how such maps are constructed; C is to a time-lapse video of the construction of a real focus group’s map; and D is to a list of what you need to set up this type of focus group environment.
focus group data to reduce the characteristics down to a number that is then manageable for the online questionnaire. The online questionnaire is then created and made available to the school for at least a week, to enable staff and other participants to individually rate the prominence and desirability of each core Characteristic, and to make additional comments that are anonymous. Finally, the questionnaire output, together with that from the focus groups, the first Task Force session, and the facilitator’s observations and discussions, is prepared for use in the second Task Force session.

Core Characteristics
The new focus group technique used in this evaluation is an excellent medium for creating user-generated pictures of the way the school does school, the way it does ICT, and the way it has been developing its IDT. It is also an excellent medium for collecting the most prominent characteristics of those three entities, using labels that are refined by the group’s focus on their accuracy. The benefits of working in groups, however, must also be balanced against some of the disadvantages of group work, such as power issues. To achieve that balance, the next task for the school will be an online questionnaire, completed individually and anonymously. One of the central tasks of that questionnaire is to provide individual feedback on the output from Stage 1 using a Delphi-style approach. Unfortunately, the sheer number of user-generated characteristics of the school, if listed by the labels developed in the focus groups, is beyond the scope of a feasible questionnaire, so they need to be reduced to a more manageable number. That is achieved through a second, thematic analysis of the labels extracted from the focus groups’ maps, to produce a set of themes, or core Characteristics of the school, which are then used to construct the school’s online questionnaire.

Personal ratings
The characteristics from all the school’s focus groups have now been extracted and reduced to a smaller set of themes by the facilitator. After that brief interlude, the evaluation task now returns back into the hands of the school community, through a Delphi-style approach that once again places primary emphasis on the teachers as experts in the core business of the school – teaching and learning. This time, however, the task is not carried out within groups or in public, but individually and anonymously through an online questionnaire. Despite this emphasis on responding as individuals, however, it is still the total pedagogical expertise within the school, rather than individual expertise, that is being brought to bear on the task, so the online questionnaire process will also aggregate those individual responses through a series of simple statistical analyses. The central task for the school in this second stage is to rate the prominence and desirability of the themes (or core Characteristics) that have been developed from the focus group characteristics, and to rate the extent to which the school’s IDT has contributed to, or detracted from, those core Characteristics of the school.

During the period that the online questionnaire is being completed by the school community, the facilitator tracks its progress, and provides email and phone support to the school as required. On-site support is also provided by Task Force members, usually in direct response to participants’ inquiries, but occasionally in response to contact from the facilitator. While there is no way of tracking exactly who has completed the questionnaire, the use of login codes allows for tracking how many of each group (staff, students or parents) have done so, and even to identify which codes have been used to do so. This provides opportunities for sending targeted appreciation and support messages to individual participants without compromising their anonymity, using their individual codes within a broadcast email.

Data summaries
As the final activity in this second stage, the facilitator prepares the output from the various evaluation processes for use in the next Task Force session. Initially, this work is focused on re-organising the focus groups’ pictures or maps into more useable, but also less-identifiable, formats. Once the questionnaire closes, its output is then also analysed and summarised, and combined with the other evaluation outputs, including salient points from the observation and discussion notes, and from the document review, for presentation to the Task Force group.
The analysed and summarised outputs from the two core processes within the evaluation – the focus groups and the online questionnaire – will provide a wide range of stimulating input for the Task Force group’s second session. The aggregated focus group pictures/maps and the success, prominence and desirability graphs from the questionnaire analysis, supported by Characteristics reference lists, provide a wide range of non-trivial visual stimuli. In addition, the facilitator also prepares a brief presentation, if appropriate, of any relevant points from the free-response comments, the observation and discussion notes, and the document review, that either did not arise from those core processes, or that suitably highlight points that did.

Stage 3 – (Mis)alignments and action reports

The third and final stage consists of two scheduled sessions – one for the Task Force, the other a full staff meeting. The Task Force session is a very intensive one, designed to review, analyse and respond to the output of the evaluation, and especially to develop plans of action to put those responses into effect. After some overnight preparation by a delegation from the Task Force, the full staff meeting serves as a forum for the Task Force to report on the output from the school’s evaluation work, and present and discuss the action plans developed in response to those outputs.

User-centred leadership

The Task Force session in this stage is that group’s most intensive task during the evaluation. It focuses the energy, expertise and local knowledge of the evaluation’s leaders onto the task of ensuring that all the work of the staff and the volunteer members of the school community produces actionable plans and strategies to develop a more successful IDT. This involves reviewing the various outputs from the other evaluation processes, discerning and highlighting the most prominent issues and concerns in that review, and developing strategies for dealing with them. At all times the focus is to remain on the big picture of the school as a whole, on the particular way that their school does school, and on the IDT’s alignment with it. This task will inevitably and necessarily involve minor excursions into details – whether technical, managerial, or administrative – but attention will continually be re-focused on the big picture themes. (Other processes and groups – technical, managerial, and administrative – will take their usual responsibilities for dealing with those details at an appropriate time.)

Being primarily a formative rather than summative process, the goal of this evaluation is not simply to report a summary of the outputs from the evaluation work carried out by the school, or even to report on the review of those outputs by the Task Force. It is to develop and report on actionable plans and strategies to increase the usefulness and effectiveness of the IDT in its goal of empowering its users in the school’s core business. The particular way in which these plans and strategies are developed by the Task Force, and presented to the full school staff meeting, is not prescribed by the evaluation process. However, they are expected to present both an immediate-strengthen-or-change action report, and a longer-term-development action report, including an initial timeline.

As with the first Task Force session, this session also serves as leadership development for the group members, not simply in taking on a more user-centred and personalised approach to IDT development, but also in leading and carrying out such a user-centred and holistic evaluation process. The role of the facilitator gradually moves from initially leading the data summary review, to simply resourcing it and keeping it moving along within its time constraints. As this review passes the point of diminishing returns, the facilitator may, if appropriate, introduce a brief presentation of any relevant points from the free-response comments from the questionnaire, the observation and discussion notes, and the document review, that did not arise from the data summaries review. However, as the discussion turns to prioritising the issues gleaned from the evaluation data, and developing strategies and actions to deal with those issues, the responsibility for doing so is kept squarely in the hands of the group members.
Personalised to the way the school does school

Finally, the next day the Task Force presents the results of the staff’s evaluation work, as well as their own action reports, to the full staff meeting. In line with the shift of perceived responsibility for the evaluation from the facilitator to the school, and of its perceived leadership from the facilitator to the task force, the format and procedures for the second full staff meeting are the initiative of the task force. To reinforce the school’s ownership of the evaluation process, the facilitator does not take part in presenting the report, though still remains available for any questions that may require facilitator input.

Conclusion

This is a school’s professional practice of formatively evaluating its implementation of digital technologies. It is complex to meet the needs of a complex situation, yet it is sufficiently compact so that it is do-able in very busy schools. It is comprehensive to target long-term issues, yet it is sufficiently specific to deal with immediate issues. It is a process that places the responsibility for the outcomes squarely in the hands of the school community, with particular emphasis on bringing the staff’s total pedagogical experience and expertise, and local knowledge, to bear on the task. But it is not only professional practice – it is also professional learning, as staff begin to re-orient their thinking towards a more user-centred, personalised model for developing their IDT, and as its leaders learn how to lead a more holistic process that is itself more user-centred, and personalised to the way their school does school. This seamless integration of professional practice, and unobtrusive professional learning through that practice, is one of the central achievements of this process. Being the school’s first experience of this particular professional practice, it draws extensively on the leadership and guidance of the facilitator. But being professional learning, it also prepares the school to utilise a facilitator significantly less in subsequent evaluations – only the focus group sessions, and the analysis of the corresponding video clips, ultimately require such independence, to ensure confidentiality for staff.

References