KEY COMPETENCIES IN SECONDARY SCHOOLS: AN EXAMINATION OF THE FACTORS ASSOCIATED WITH SUCCESSFUL IMPLEMENTATION

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Abstract

Many countries are at varying stages of implementing competency-based education into their schools to equip youth with skills necessary to adapt to a changing world. Very little is known regarding practical approaches to incorporate competencies into school curriculum. This study examines five schools in Auckland, New Zealand from a variety of socio-economic areas. Seven senior school leaders were interviewed about their views, understanding and the perceived integration of Key Competencies into the curriculum. Schools that were more successful in terms of implementation planning and progress shared the following characteristics: strong leadership, rethinking pedagogy, professional learning support, and accessing of relevant resources. These characteristics are used to frame recommendations to aid implementation and for further research on key competencies as they might be implemented in secondary schools

Key words

Competency-based education, educational change, secondary education, curriculum implementation

Introduction

In 2007 in New Zealand, the Ministry of Education substantially changed the national curriculum to become more aligned with international trends of incorporating Key Competencies (KCs) into the curriculum to better prepare youth for their place in society (Cornford, 2002; Davies, 2006; Delors et al., 1996; Gilbert, 2005; Rychen, 2002; Rychen & Salganik, 2003). New Zealand's KC policy concentrates on the learning environment and the New Zealand Curriculum (NZC) (Ministry of Education, 2007) document reflects this with a shift in emphasis from content to process within a focus on effective pedagogy. The NZC document acts as a framework in which individual schools are responsible for integrating the KCs into their school curriculum and practice. As such, there was no "best practice" model for implementing or assessing the KCs when the new curriculum was introduced.

Implementation of a new curriculum requires that school leadership create a supportive framework aligned with the vision of the curriculum that helps teachers understand the curriculum and its positive impact on student learning (Fullan, 2001, 2008; Hall & Hord, 2011). Implementing changes also requires simultaneous, coordinated transformation of multiple aspects including practice, thinking, systems, behaviour and beliefs throughout the school (Fullan, 2008).

The implementation of the 2007 NZC has been the focus of much research (cf., Cowie et al., 2009; Hipkins, 2013; Hipkins & Boyd, 2011; Lee, 2013; Shagen, 2011; Shagen & Hipkins, 2008; Sinnema, 2011). Interestingly, the KCs have driven most activities aimed at the transformation of the curriculum and pedagogy during the NZC implementation process (Hipkins & Boyd, 2011). Hipkins and Boyd described this process as consisting of "iterative explorations" of the KCs in which, as teachers and schools attempt to integrate KCs in their existing curriculum and teaching approaches, they learn more and more about the nature of the KC, how they might be integrated and what needs to change when adopting a more competency-based approach. This iterative process often leads to the development of professional learning opportunities to enhance teachers' understanding of how the competencies can be enacted in specific curriculum areas, and how to engage students with the KCs.

This paper examines the processes and strategies used by five economically diverse schools in their KC implementation. More specifically, we aimed to identify factors involved with the initial implementation of the KCs as outlined in the New Zealand Curriculum document, the attitudes towards them, and difficulties faced. Research questions focused on the following:

1. The plans for implementation.
2. The stage the school is at with regards to implementing the KCs.
3. Senior school leaders' views of the nature and value of KCs.
4. Factors that have contributed to a more successful implementation of the KCs.

When this study was conducted, individual schools were at different stages of implementing the competencies into teaching and learning practice, allowing for a comparison of schools at different stages of implementation.

Methods

Study sample and research design

Participants were seven senior school leaders (SSL) recruited during the 2009–2010 school years from five schools within the Auckland region that represent a range of deciles (see Table 1). Each SSL had high levels of knowledge and involvement in the implementation process. The focus on senior school leaders was aimed at creating a leadership-driven perspective on the implementation given the critical link between leadership and successful implementations (cf., Hall & Hord, 2011).

All interviews were semi-structured, audio-recorded, and transcribed verbatim. Questions focused on assessing the implementation of the KCs into the school's curriculum, e.g., the stage of and plan for implementation, the difficulties, benefits, acceptance, value, and the impact of the implementation process and the KCs.

Table 1: School and participant information

School	Decile of School	Number of Interviews	Staff Member Interviewed
1	9	1	DP* and Principal
2	9	2	DP and HOD*
3	4	1	DP
4	1	1	DP
5	1	1	DP
	Total	6	

*DP=Deputy Principal; HOD=Head of Department

Data analysis

A qualitative description method utilizing content analysis was employed. Interview transcripts were coded utilizing QSR International's NVivo 8 software (2008) and organised according to common recurring themes, patterns and categories. Approximately 10% of the transcripts were reviewed by a separate researcher. With the exception of one quote, all quotes were similarly coded.

Results and discussion

This section is divided into two sub-sections. The first describes the progress the schools in this study have made in implementing the KCs into their curriculum. The second discusses the data related to four factors considered to be associated with appropriate progress in implementing KCs into the school curriculum.

Stage of implementation

All SSLs planned to incorporate the KCs into their school teaching as outlined in the NZC. Buy-in with respect to commitment to, involvement in and organisation of the implementation process,

however, varied across the schools. At schools one, two and three (hereinafter referred to as Group One schools), SSLs had developed and instigated a detailed implementation plan with specific goals. They talked about "changing practice", developing "learning partnerships", "powerful learners", "skilling" teachers, and having a "clear strategy" among other things. They had a detailed implementation plan they used to back up their statements. They had accessed numerous resources to help inform and guide their KC implementation including the Ministry of Education (MoE) curriculum web site, New Zealand Council for Educational Research (NZCER) resources, invited speakers, researchers and consultants.

SSLs at schools four and five (Group Two schools) had less clear implementation plans. They had accessed fewer resources to guide implementation; however, it needs to be acknowledged that these two schools were lower decile schools and may have been restricted by budgetary concerns.

Although not as heavily involved in the implementation of the KCs, SSLs at the Group Two schools also felt KCs were important. As one put it:

> We did an activity at the beginning of last year, "What"s the ideal student?" … only a quarter of it had to do with qualifications and the rest of it had to do with qualities … the qualities that we wanted for our kids were effectively the Key Competencies so in terms of value I think they're really important because they are what you need to do to get through in life. (DP, School Five)

Plans for school-wide implementation were less developed and more ad hoc in Group Two schools. As the DP in school five reported, "There has been some information go out to staff as we've found interesting things or things that have been available. There hasn't been anything directly this year."

All SSLs were asked if the students would have heard of the KCs. For schools one, two, three (Group One schools) and five, SSLs indicated that KCs were not yet taught explicitly across all school subjects. In contrast, the DP in school four stated that the school was explicitly teaching the KCs and students would be aware of them. It appears that at the time of interview, implementation of KCs had not completely filtered down to the student level. A detailed analysis of the students' awareness and interpretation of the KCs in these schools can be found in Brudevold-Iversen (2012) and Brudevold-Iversen, Peterson & Cartwright (2013).

Factors that influenced progress of early implementation

Four main themes or factors identified as key to progress in early implementation of KCs at the schools in this study grew out of the analysis of the interviews. These factors were 1) pedagogy; 2) integration of KCs into the current curriculum; 3) understanding and acceptance of KCs by SSLs and teachers; and 4) evaluation/monitoring issues.

Pedagogy

SSLs at Group One schools introduced the KCs as part of a larger change of direction and pedagogy towards more student-centered learning. However, SSLs indicated that changes were not easily accomplished across departments, with physical education having the least difficulty in incorporating the KCs in two of the three schools and mathematics having the most across all three schools. "The PE department was at a real advantage … particularly the relating and goal setting and all of that, because that's been quite a big focus of their health programme" (DP, School One). Group Two schools were more likely to see the KCs as separate from the rest of the curriculum document and not something that requires a whole curriculum review. As the DP at school five indicated, "I think the biggest challenge is getting teachers to … see it as part of a whole, not just an add on…". This suggests that the SSLs are already on board in terms of linking the competencies with the specific subject areas but much work needs to be done to get all teachers on board.

SSLs at the Group One schools spoke of the importance of in-school professional learning groups for teachers as part of changing pedagogy towards more student-centered learning. "In order to implement the curriculum correctly we needed to have a good vehicle for advancing professional learning and to build a professional learning community … so that was our first focus" (DP, School Three). In contrast, a DP from a Group Two school when asked whether the KC have changed teacher

practice said, "I don't think that it has. I think that it might have sharpened focus at times, through the lens of key competencies you might have a sharper focus.… I don't think the key competencies have changed practice".

Gordon et al. (2009) argue that for KC development it is important to not treat the KCs as an add-on and instead use professional development to revisit pedagogy more generally. Further, in order for teachers to devote the time and effort to adapt teaching practices to include the KCs, they need to accept and understand the importance of them (cf., Sparks, 1988; Timperley, 2008). In addition, the level of teachers' acceptance of, commitment to, and delivery method of the KCs is likely to impact on student acceptance and positive learning of the competencies (Aspy & Roebuck, 1977; Rivkin, Hanushek, & Kain, 2005)

Incorporation of the KCs into the current curriculum.

Two themes converged on this factor: a) introduction of KC at departmental level, and b) impact of making KCs explicit within the curriculum. With the exception of school four, all schools included in this study introduced the KCs at the departmental level first. To achieve this, the Group One schools ran professional development meetings where ideas relating to how to incorporate KCs into content areas could be exchanged between departments. These meetings helped teachers to see the benefits and potential ease of incorporating KCs into their own content areas.

> We're doing lots of different learning there for staff, but it's all focused on students, improving student engagement, and we're really looking at how can we use IT to improve student-centred learning, … so that students can reflect on and evaluate themselves in terms of the Key Competencies. (Principal, School One)

> … now what we do is we've set aside time for departments to do a professional learning circle in their own right, so they're actually looking into how they can become more responsive teachers in their departments, so how do you know what the kids needs are, how do you make it explicit to them what they need to be able to do, how do they know when they're successful, and what data informs that? (DP, School Three)

Involving teachers at this stage, where they can make links between the KCs and practical teaching applications in their subject area, is potentially effective as it involves personal engagement, aiding buy-in. Indeed, Hipkins (2006) argues that getting teachers to modify their teaching to explicitly showcase the KCs is necessary for successful competency learning (Hipkins, 2006). Further, the process of designing learning activities is useful for consolidating teachers' understanding of learning goals, encouraging both reflective and active practice (Timperley, 2008; Zohar & Schwartzer, 2005).

The second theme related to Factor 2 focused on the benefits of making these competencies explicit in the curriculum and was considered to be one of the most valuable aspects of the new curriculum. The following response from a DP is typical, "It makes it much clearer, because being in the curriculum it just gives it a level of legitimacy which I'm not sure we were as confident with before" (School Two).

In addition, having the KCs explicitly described in the curriculum also had an impact on student feedback and progression. SSL staff at Group One schools, but less so at Group Two schools, felt that teaching and learning of the KCs explicitly meant that students would receive feedback regarding their learning of the KCs and that there was a push for students to become more skilled at each competency.

Understanding and acceptance of specific KCs

In terms of understanding what each KC means, it is clear that SSLs' understandings at the time of the interviews were still evolving and contained many misconceptions when compared to the NZC's stated definitions (see http://nzcurriculum.tki.org.nz/). The examples that follow illustrate this situation.

Managing self. This competency was seen as most important by SSLs and mentioned most often, perhaps because it is easily understood, at least superficially, and is the most relevant to SSLs and teachers in terms of organising time and behavior. SSLs' comments suggested that this KC covered a

wide range of skills and is broader than just managing learning (e.g., self-assessment, critical analysis), but includes emotions as well. "Managing yourself can be anything, it's a huge area. [A student who] is not good at managing, say, anger. Well then that's part of managing self, and that is going to be a life-long struggle probably for that student" (P, School One). Further, this competency appears to grow in scope and complexity due to changes in the nature of tasks as students move through secondary school.

> … so managing self, at the junior, the Year 9 level that is pretty much very simple and not deep in terms of being at school on time, having the equipment to learn, being prepared to learn.… As it moves up through the school, managing self becomes much more in terms of academic planning so managing yourself we call our senior school from Years 11, 12 and 13. So in the senior school … we're looking at much more: goal setting, looking at some academic counselling and mentoring, so in terms of how we're going to get this many NCEA credits.… (DP, School Three)

Although this KC was discussed by all SSLs, the full richness of the KC appears not to come through for most SSLs. For example, Hipkins (2006) suggests that this competency includes identity and knowing who you are culturally, but these ideas were not mentioned by any of the SSLs.

Thinking. SSLs talked about different levels of thinking and encouraging students to go "from the lower end to the higher end" (DP, School Three), and to have "independent thinking and debating kind of questioning skills" (HOD, School Two). There was not much detailed discussion of this KC perhaps due to the common view that the explicit teaching of this skill is not required for it is embedded in most subjects, Finally, also missing in the SSLs' discussion was linking of the *Thinking* competency to intellectual curiosity or problem solving, which is part of the NZC description of this KC.

Using language, symbols, and texts. This competency was not talked about much as SSLs indicated that teachers were "happy with using text and numbers, that's easy because that's what we do" (DP, School Four). The general view stated by the SSLs was that teachers felt that it was already an integral part of the curriculum. While this view/perception may be understandable, it is problematic in view of research which shows that few teachers explicitly teach about languages, symbols and texts of their discipline, something that can lead to greater understanding of ideas and content (Gee, 2003; Hipkins, 2006; Lemke, 1998; Wyatt-Smith & Cumming, 2003; Yore & Treagust, 2006).

Participating and contributing and Relating to others. These KCs are presented together as they were often referred to interchangeably by SSLs. This blurring between these two KCs suggests SSLs need to better understand these competencies and the differences between them. These competencies were also often described in a limited way such as "group work". As one Group Two DP stated, "I see you're getting on really well with so and so, that's participating" (School Four). SSLs comments regarding *Relating to others* failed to link this KC with issues of diversity and the need to recognise different points of view, which is clearly embedded within the NZC definition of this competency.

Acceptance of KCs. In terms of acceptance of the KCs, all SSLs were positive about the concept of KCs and their educational value to students developing into life-long learners. SSLs were also asked about teacher reaction to the concept and implementation of KCs. Responses suggested that teacher reaction was mixed. Initial fears of staff included a hidden agenda relating to another layer of assessment, increased workload, and changing teaching practices. All SSLs seem to be addressing teacher concerns and felt that these fears were reducing with time and eventually most, if not all, teachers would embrace the KCs. The primary method identified by the Group One SSLs to address concerns about the KC implementation was to allow teachers to slowly adjust to the idea of student-centered learning, augmented by professional development and peer support.

All SSLs reported that a common teacher response to implementing KCs within the curriculum was "we already do that" (c.f., Hipkins, 2006). Group One school SSLs tended to react to teachers suggesting they already taught the KCs by focusing on the advantages of introducing KCs as an explicit part of the curriculum. As one Group One SSL put it, "Being in the curriculum—it just gives it a level of legitimacy which I'm not sure we were as confident with before" (HOD, School Two). This legitimacy made the teachers "accountable" for teaching the KCs. Also, SSLs from Group One

schools emphasized that being part of the curriculum document meant that teachers had to both deliver and assess teaching of the KCs. As the principal of School One stated:

> Cause it's easy to say we do all of that. But when you've got it there and you've got to actually go and evaluate, well [this is] what have I done with these kids in those areas [and they are] beginning to show that they are making progress. I think that's actually quite different.

Importantly, some SSLs noted that while some teachers have linked the pedagogy with the competencies, some did not. Most SSLs did not express concern over this and felt that if they continued to focus on advantages of explicitly linking the pedagogy with the competencies teachers would eventually change their pedagogy.

Evaluation/monitoring of KCs

SSLs viewpoints were canvassed regarding whether and how one would measure and evaluate the KCs. In response to this question, a principal (School One) noted that "Key Competencies are not something that many schools would want to directly assess out of context, because of course they're woven into your subject areas". Evaluation issues were not at the forefront of SSLs' minds since the emphasis of competency-based education in New Zealand is on the learning environment. All SSLs were of the shared belief that KCs cannot or should not be assessed directly through a quantitative measure. The principal at one school was particularly against measuring the KCs, stating, "They're incredibly subjective" (School One). Another SSL indicated that a problem he saw with measuring the KCs is that any measurement needs to connect to the context.

> The example I always use is that one with the person's bedroom and you go in there and there's like everything lying around and you could imagine that to be like your key competencies of managing self, it's just totally failed, you have socks lying under the bed and yet in another situation that person would be incredibly good at self-management because it was something which had more value to them. (HOD, School Two)

SSLs felt that assessment of KCs was about a conversation rather than a number. As one DP put it, we need to

> guard against … that sort of numeric, qualitative, layer that really is a teacher judgement anyway…. It's a conversation between the teacher and the student… and you know how do you assess them anyway? (School Three).

SSLs from Group One schools did, however, speak of the need to both evaluate the implementation of KCs by teachers and measure students' progression through each competency. Ideas included commenting about KCs in student reports, using a supporting model (rubric) to gauge progression with a KC, "you come armed with your activity, and you also come armed with really clear ideas of what it looks like at each step to go across through the rubric" (DP, School Three), and self-assessment by students including the use of e-portfolios.

Assessment of the KCs (how and whether they should be) is not explicitly addressed in the NZC. It is nevertheless worth noting that Timperley (2008) argues that one of the 10 steps for effective professional development in teachers is the need to gather some kind of assessment information about where students are at and what students need to know so that teachers can work out the best next steps.

Conclusions, implications, and future research

Schools which were more successful at integrating the KCs into their curriculum were characterized by the following: 1) strong senior school leadership; 2) rethinking of pedagogy and teaching practice; 3) forums for professional learning and support; 4) accessing of a variety of resources; and 5) implementation plans. Similar levels of understanding (or lack of understanding) of the KCs and views on evaluation appeared to occur across all schools as evidenced by the SSLs' comments. The uncertainty regarding the ability to teach KCs expressed by the SSLs who participated in this study underscores the importance of having a strong implementation plan.

In a report examining the implementation of the European KCs (Gordon et al., 2009), the role of leadership in terms of school organisation, building a climate of trust, and collaboration and establishing reflective communities of practice were seen as critical to successful KC implementation. Interventions to promote good leadership should perhaps be considered within the New Zealand context; for example, professional training programs for preparing school leaders (Gordon et al., 2009).

Accountability for the successful implementation of the KCs could motivate SSLs. Currently, the national curriculum requires SSLs to implement the KCs; however, the lack of accountability and assessment of the KCs in New Zealand is a barrier to fully demonstrating the effectiveness of their implementation with respect to student gains (Peterson et al., 2013). It is, therefore, recommended that a range of possible assessment programmes be developed after wide consultation with all interested parties to enable the greatest possible acceptance.

Promoting greater use of valuable web-based resources[i] particularly for lower decile schools, may also facilitate implementation. There are two main reasons for this: 1) research suggests greater use of resources helps implement change (Huberman & Miles, 1984); and 2) to facilitate planning within and across schools. There is a need for an integrated and actively executed plan to share successes (and failures) in implementation through use of easily accessible resources. One school within the present study had not engaged in any planning for KC implementation within the curriculum and some SSLs in other schools voiced curiosity about what other schools are doing. Sharing of successful processes and outcomes could aid progression towards a best practice model of implementing KCs into schools. Currently, some schools share their experiences through the New Zealand Ministry of Education website; however, not all schools in this study were utilizing this site, suggesting the need for more promotion and wider use of this resource.

This study has highlighted some of the key factors associated with successful implementation of competency-based education, areas of resistance, likely hurdles and how a number of schools have dealt with these. While the number of SSLs in this study was small, and the schools in this study are now 3–4 years further into their KC implementation, our findings continue to be relevant given the diversity of implementation plans across the five schools reported here, which suggests it is likely that other schools in New Zealand are at a similar phase of competency integration. These findings will be of benefit to those schools and other SSLs who continue to face the challenges of implementing the integration of competencies into the education curriculum.

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[i] The Ministry of Education have made available a self-audit tool and practice exemplars (http://keycompetencies.tki.org.nz/Key-competencies-and-effective-pedagogy), and a resource bank (http://nzcurriculum.tki.org.nz/Curriculum-resources/NZC-resource-bank/Key-competencies/Supporting-materials) that are intended to support and facilitate changing pedagogy to integrate the key competencies.

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