Crowd-Sourced Curriculum-Alignment Data: A survey of school libraries and proof-of-concept

ABSTRACT

Teacher librarians (TLs) are ideally placed to meet resource needs for Australian teachers and students, but have an expressed need for greater support in matching (or 'aligning') local and online resources to educational objectives such as those specified in the Australian Curriculum (eg Softlink 2014). This kind of alignment has been identified as being a crucial ingredient for improved student outcomes (Squires 2012).

Education Services Australia (ESA) has aligned digital resources to the Australian Curriculum since 2011. The Schools Catalogue Information Service (SCIS) is a business unit of ESA that creates and distributes MARC records to 93% of Australian school libraries. Whilst SCIS has not traditionally provided curriculum-alignment data, it is investigating how this might be done to best meet the needs of schools and fit TL workflows whilst being viable in terms of associated costs and resources.

In his discussion of evaluator-driven alignment, Chadwick (2016) identified that TLs were well suited for making resource alignment judgements. Whilst doing this work within their own collection may benefit their school community, ESA is interested in the potential for TLs to create alignment data collectively. The viability of this is likely to depend on factors including TL motivation and capacity, and technical infrastructure for collating such data.

This paper describes an online survey of 586 school library staff, conducted by ESA between 1 February and 11 March 2016. The survey examined TL attitudes towards resource alignment, the current alignment practices occurring in libraries, and TL opinions towards crowd-sourced alignment metadata.

A large majority of respondents felt that alignment data would benefit both the school and the library. However, there was less support for alignments generated by other TLs than there was for alignments generated by an agency such as SCIS. It was important to respondents that resources were aligned to appropriate learning areas and year levels, and strong preferences were expressed for some learning areas over others.

A possible mechanism for collecting and distributing crowd-sourced alignment metadata is presented in the form of a widget installed on the SCIS Voyager catalogue.

By saving teacher time and directing students to a range of quality resources that directly target national learning priorities, this work has the potential to improve the position of school libraries as key players in whole-of-school delivery of curriculum-based teaching and learning.

INTRODUCTION

Australian school libraries do much to support teaching and learning in collaboration with teaching staff, but have an expressed need for greater support in matching (or 'aligning') local and online resources to educational objectives such as those specified in the Australian Curriculum (AC) (Chadwick 2016a).

Schools Catalogue Information Service (SCIS), a business unit of Education Services Australia (ESA), provides subscribing school libraries in Australia, New Zealand and internationally, with the largest database of school-related catalogue records in the Southern Hemisphere. Almost 94% of Australian schools import SCIS's MARC-21 records into their local library systems. To date, resource alignment has not been in scope for SCIS, but it is currently researching the feasibility of doing so.

In early 2016, SCIS conducted a survey of 586 Australian school libraries, aimed at better understanding attitudes towards resource alignment and issues associated with implementing it. This paper presents additional analyses of that survey data. Specifically, attitudes towards the perceived benefits of alignment are examined, both for the whole sample and for two significant subgroups – teacher librarians, and respondents from libraries that are highly engaged with teaching staff in the delivery of curriculum. In addition, perceived issues associated with implementing alignment are investigated, including any areas to the AC that may warrant special priority in alignment. Finally, respondent's attitudes towards methods of implementing

2

alignment are explored. One such method, *crowd-sourced alignment* (CSA) is of special interest in this paper.

The paper begins by examining resource alignment generally, including a discussion of alignment methodologies including CSA. Alignment is described in the context of the AC. The role of school libraries in supporting curriculum via alignment is considered before presenting the findings of the current analyses.

Finally, a SCIS trial project is described as a proof-of-concept. In this trial, a widget on the SCIS online public access catalogue (OPAC) makes use of AC linked-data and enables users to tag resources to curriculum outcomes and download those alignments in MARC records.

CURRICULUM ALIGNMENT

Chadwick (2016a) describes *resource alignment* (henceforth referred to as *alignment*) as an asserted connection between an informational or instructional resource and learning outcome/s specified in formal curricula "to the effect that use of the resource *per se* will result in improvement on assessments designed to measure performance on the outcome".

Chadwick (2016b) described resource-driven, evaluator-driven, and metadata-driven alignment, three broad strategies SCIS has considered for creating alignments.

Alignments may be resource-driven when a resource was "born aligned": the author and/or publisher designed the resource to address a curriculum-outcome or set of outcomes. Such resources include textbooks that are relevant to curriculum at global levels and may constitute a course-of-study in themselves (Squires 2012).

3

Resources that are not born-aligned may be serendipitously relevant to curriculum elements or element subsets, by virtue of their subject matter (Adamich 2009). Any fiction or non-fiction resource may be broadly relevant to a learning area and/or tightly relevant to a particular curriculum element or set of elements. In these cases, it is not the resource itself that 'asserts' the alignment.

Chadwick (2016b) discussed metadata-driven alignment, whereby alignment may be inferred via resource metadata, such as similarities between the topics covered by the curriculum outcome and those covered by the resource.

Chadwick (2016b) also identifies *evaluator-driven alignment*, where alignment is established via the judgement of an expert or semi-expert evaluator or set of evaluators. Adamich (2010) describes an evaluator-drive alignment project undertaken as part of the Ohio Department of Education's INFOhio project. In this model, "education teams" of SMEs and TLs identified candidate resources, which SMEs aligned to relevant outcomes in the Ohio Academic Content Standards. Alignments and auto-generated MARC fields, such as the 658 Curriculum Objective field, were sent to TLs via an automatic email. The TLs modified their local record and then submitted that record to a central database, making it available to other schools. The project involved state-wide training sessions for education teams.

CSA is a form of evaluator-driven alignment established when groups of end-users – most likely teachers or TLs – contribute alignment propositions which are collected and aggregated in a system according to defined business rules. As opposed to more targeted forms of evaluator-driven alignment, such as a centralised team of SMEs, crowd-sourced alignment offers an economy of scale whereby resources that

4

are guaranteed to be in circulation can be aligned in large numbers. However, it naturally raises concerns about the experience and capacity of contributors to generate quality alignments and alignments with sufficient curriculum coverage.

CSA has the potential to leverage the collective expertise of Australian school library staff by aggregating work done at local levels. Whilst doing this work within a specific school library may benefit the local school community, SCIS is interested in the potential for TLs to create alignment data collectively. The viability of this is likely to depend on factors including TL motivation and capacity, and technical infrastructure for collating such data.

RESOURCING THE AUSTRALIAN CURRICULUM

In Australia, alignment of resources to curriculum must be considered in the context of the AC.

The Australian Curriculum and Reporting Authority was established to implement and publish Australia's first national curriculum after the 2008 Melbourne Declaration on Educational Goals for Young Australians (Australian Curriculum and Reporting Authority [ACARA], 2015a).

The Australian Curriculum provides a common set of learning outcomes for Australian jurisdictions and educational bodies. Version 8.1 of the AC's F-10 Curriculum was approved by the Education Council on 18 September 2015 (ACARA, 2015a). It represents:

> *…a progression of learning from Foundation - Year 10 that makes clear to teachers, parents, students and others in the wider community what is to*

be taught, and the quality of learning expected of young people as they

progress through school. (ACARA, 2015b)

Discipline-specific subject matter is organised within eight high-level *learning areas*:

English, Mathematics, Science, Health and Physical Education (H&PE), Humanities

and Social Sciences (HASS), The Arts, Technologies, and Languages. *Content*

Descriptions (CDs) are the 'building blocks' of the AC, describing what is to be learnt

at a given grade or band of grades (see Figure 1).

Figure 1. Website screenshot of AC Content Description ACTDIP012

The AC is also characterized by seven general capabilities (GCs): Literacy;

Numeracy; Information and Communication Technology Capability (ICTC); Critical

and Creative Thinking (CCT); Personal and Social Capability (PSC); Ethical

Understanding; and Intercultural Understanding; and three cross-curriculum priorities: Aboriginal and Torres Strait Islander Histories and Cultures (ATSIHC); Asia and Australia's Engagement with Asia (AAEA); and Sustainability. GCs "comprise an integrated and interconnected set of knowledge, skills, behaviours and dispositions that apply across subject-based content". CCPs are not subjects *per se*, but are developed and addressed through learning area content, where appropriate. (ACARA 2015a)

Each of the eight Australian states and territories are responsible for their own timeframe and method of implementing the AC. As of 2016, each is implementing the AC or transitioning to use of the AC. Some (notably New South Wales and Western Australia) are implementing the AC by updating local syllabi or curricula to incorporate AC outcomes (ACARA, 2015b).

Work on the AC is accompanied by work to create and curate curriculum-aligned instructional resources. ACARA seeks to support Australian educators by "developing materials to support teachers as the curriculum is being implemented" (ACARA, 2015b). ESA, a not-for-profit company owned by all Australian education ministers, works with ACARA to create, publish, and disseminate curriculum materials. Whilst ESA has worked extensively on AC alignment, this work has traditionally been out of scope for the SCIS business unit.

Curriculum-Engaged Libraries, Teacher Librarians, and Demand For Alignment

As early as 2003, the Ministerial Council on Education, Employment, Training and Youth Affairs' ICT in Schools Taskforce (Ministerial Council on Education,

Employment, Training and Youth Affairs [MCEETYA] 2003) acknowledged the role of libraries and library systems in delivering curriculum aligned resources:

> *It is highly desirable that the system that enables teachers to plan lessons or units of work online also enables them to seamlessly discover resources from a local educational repository or from school library collections. (p20-21)*

Australian school libraries express a strong desire for data that makes connections between resources and curriculum outcomes. In SCIS's 2013 survey of 300 school library staff (Kennedy 2013), respondents listed "Resources linked to the Australian Curriculum" as the most desirable of a range of possible services. Similarly, in the Softlink (2014) *Survey of school libraries*, "Aligning Australian Curriculum (ACARA) with existing resources/practices" was reported as respondents' highest priority objective. However, the 2013 SCIS survey also revealed a sense that collections were not adequately supporting the curriculum, and appropriate materials for the curriculum were difficult to find.

Given that MARC records are distributed to schools from SCIS's central database, SCIS is well placed to offer alignment solutions. This is in keeping with SCIS's foundational purpose of mitigating the cataloguing burden on school libraries by cataloguing 'once for everybody'.

In early 2016, SCIS conducted a survey of 586 Australian school libraries with the intention of gaining further insights into the demand for resource-alignment, and ascertaining how it might be implemented to best support end-users. The survey included items measuring perceptions of the value of alignment, perceived issues

8

and priorities in alignment, attitudes towards methods for implementing alignment, and ratings of current curriculum and alignment activities in the school and by the library.

In an initial analysis of the survey data, Chadwick (2016a) created an aggregate measure of "Perceived Value of Alignment" to ascertain overall demand for resource-alignment amongst Australian school libraries, but also to examine demand within subpopulations of school libraries. He found that demand did not differ across state jurisdictions, school levels, or school sector, but was higher in school libraries with at least one teacher librarian, and those that were more actively engaged with teaching staff to support the curriculum. These latter libraries, termed "Curriculum-Engaged Libraries", were more prominent in secondary schools, Catholic schools, and larger schools with teacher librarians and more library staff. Such libraries were characterised by activities such as recommending resources to teaching staff, working with teaching staff to determine their resource needs, and purchasing resources to target AC outcomes. Whilst some libraries were more active than others, these activities were relatively high frequency across the full sample, with upwards of 85% of the sample reporting doing the above activities at-least once per term. Other engagement activities were less common in the full sample, such as examining the collection for gaps in coverage of AC outcomes, curating collections or lists of AC-aligned resources, and entering AC alignment data in the actual catalogue records (with 57%, 49% and 17%, respectively, of respondents reporting doing so at least once per term).

The current paper intends to extend findings by Chadwick (2016a) by making more fine-grained analyses of the perceived benefits of alignment, as well as examining

9

details of how resource-alignment might be implemented. Attitudes towards crowd-sourced alignment in particular will be investigated. Because Chadwick (2016a) found that curriculum-engaged libraries and teacher-librarians expressed greater desire for resource-alignment, the attitude of these subsets will also be examined as factors impacting the outcomes in the current paper.

METHOD

Survey

A survey was designed and published on surveymonkey.com, and was available to be completed between 1 February and 11 March 2016. Details of the survey design and implementation have been described by Chadwick (2016a).

Items reported in the current paper can be found in Appendix A. All survey question numbers refer to those listed in Appendix A.

Survey data was cleaned up, resulting in a sample of 586 responses (Chadwick 2016a).

Background variables

Chadwick (2016a) reported that school-level, school sector, and school location (questions three to five) were approximately representative of the Australian schools population. These variables will not be further analysed or reported in this paper.

Independent Variables

Teacher-Librarian was a dichotomous variable taken from question one, indicating whether the respondent was a teacher librarian.

Library Engagement was a dichotomous variable (*High Engagement* vs *Low Engagement*) constructed from a scale developed by Chadwick (2016a) measuring the extent to which libraries actively supported curriculum delivery. The scale was an average of the numerical values for questions 6a to 6h (where *Never* = 1; *Once per term* = 2; *Monthly* = 3; *Weekly* = 4). The scale was dichotomised via a median split, with the cut-point being 2.5.

Dependent Variables

Each scale consisted of qualitative labels (eg *None*, *Low*, *Medium*, *High*). Where these labels constituted an interval-scale of measurement, scales were converted into integer values for analysis. For example, items in question 12 were given the following values: *None* = 0, *Low* = 1, *Medium* =2, *High* = 3.

Perceptions of alignment. Items from questions seven and eight measured respondent's perceptions of the value of alignment, their library's intention to provide this kind of data to staff, and barriers to doing alignment work within their own library.

Alignment Issues. The dichotomously scaled items in question nine measured a variety of possible issues associated with alignment data, including quality, authoritativeness, and coverage of curriculum and appropriate resources.

Curriculum Priorities. A series of items measured the perceived demand on the library for resources from each AC learning area (question 10), general capability (question 11), and cross-curriculum priority (question 12).

Alignment Practices. Question 13 included items asking respondents to rate possible methods of acquiring alignments: from an authoritative source (SCIS) or from other school libraries (CSA). It also enquired about whether they would consider

11

contributing alignment data, and whether they would provide feedback about crowd-sourced alignments (such as to improve the quality of those alignments).

RESULTS

All analyses were performed in SPSS Version 24 (IBM, 2016).

A series of 2*2 (Library Engagement = *High* vs *Low*; Teacher Librarian = *true* vs *false*) between-groups ANOVAs were performed for each continuously scaled outcome variable.

For the dichotomous alignment-issues variables, a series of cross-tabulations were performed for each outcome, first inspecting relationships with Library Engagement, and then for TL. Chi-Square analyses were performed to determine significant differences in cell proportions.

Full details for each analysis are provided in Appendix B, including cell means and standard deviations and test statistics for Chi-square and F-tests.

The sample consisted of valid 586 responses on the outcome variables, 582 of which also had complete TL and Library Engagement data.

Independent variables

The sample included 289 low-engagement libraries and 293 high-engagement libraries. High-engagement libraries reported engaging in an average of 97% of curriculum-engagement activities (Question 6) at least once per term (SD=0.074). Low-engagement libraries engaged in 78% of curriculum-engagement activities at least once per term (SD = 0.244).

12

Table 1 Library Engagement and Teacher Librarian: Sample size (Expected frequency)

	Teacher Librarian		
	False	True	Total
Low-engagement libraries	163 (145.5)	130 (147.5)	289
High-engagement libraries	126 (143.5)	163 (145.5)	293
Total	293	289	582

Two-hundred and eighty-nine TLs responded to the survey, versus 293 non-TLs. The cross-tabulation in Table 1 shows that non-TLs were 1.24 times more likely than TLs to be in low-engagement libraries, and TLs were 1.31 times more likely than non-TLs to be in high-engagement libraries.
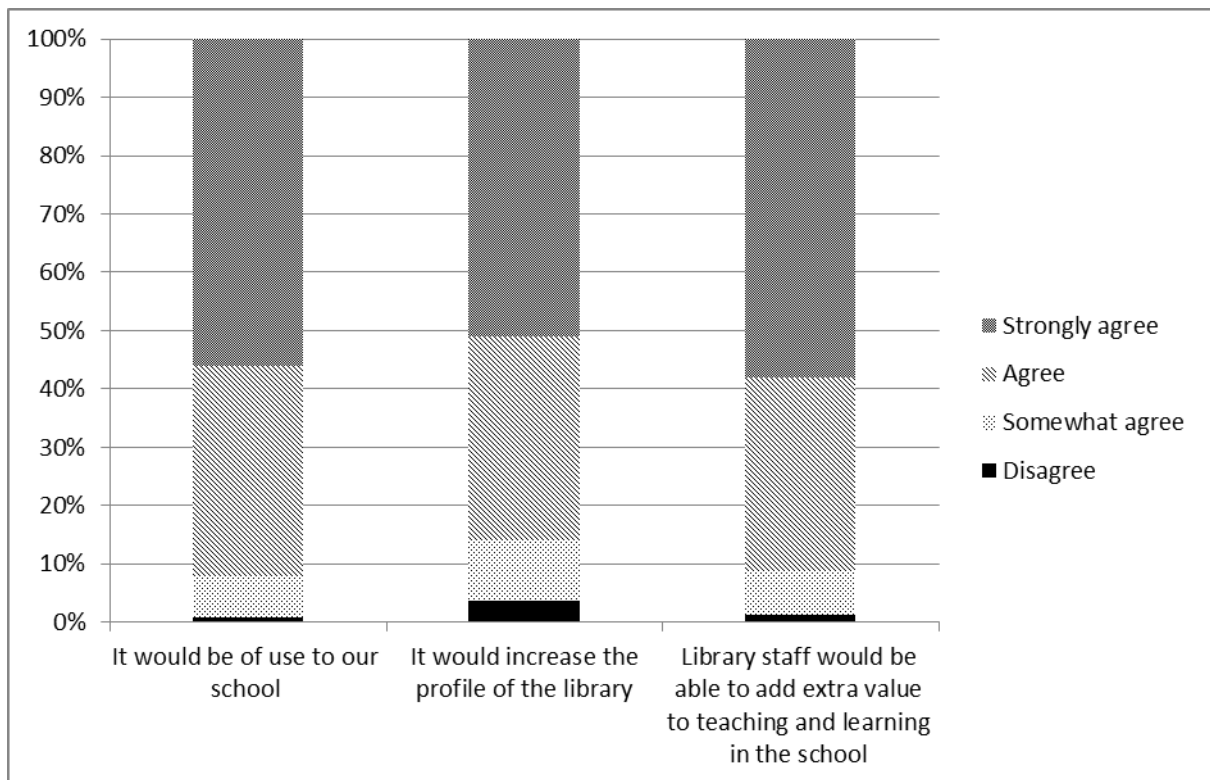
Figure 2 Perceptions of alignment (Question 7): Qualitative responses

Perceptions of alignment

Responses to questions seven and eight, measuring perceptions of alignment, are displayed in Figure 2 and Figure 3 respectively. Table 2 displays responses broken down by Library Engagement and TL groupings and includes main effects of ANOVAs. There were no significant interaction effects (see Table 9 in Appendix B)

Respondents expressed strong endorsement for alignment, with more than 95% agreeing that it would be of use to the school, increase the profile of the library, and enable the library to add value to teaching and learning, and that aligned resources would be better utilised by teaching staff. Between 45% and 58% of respondents strongly agreed with these statements.
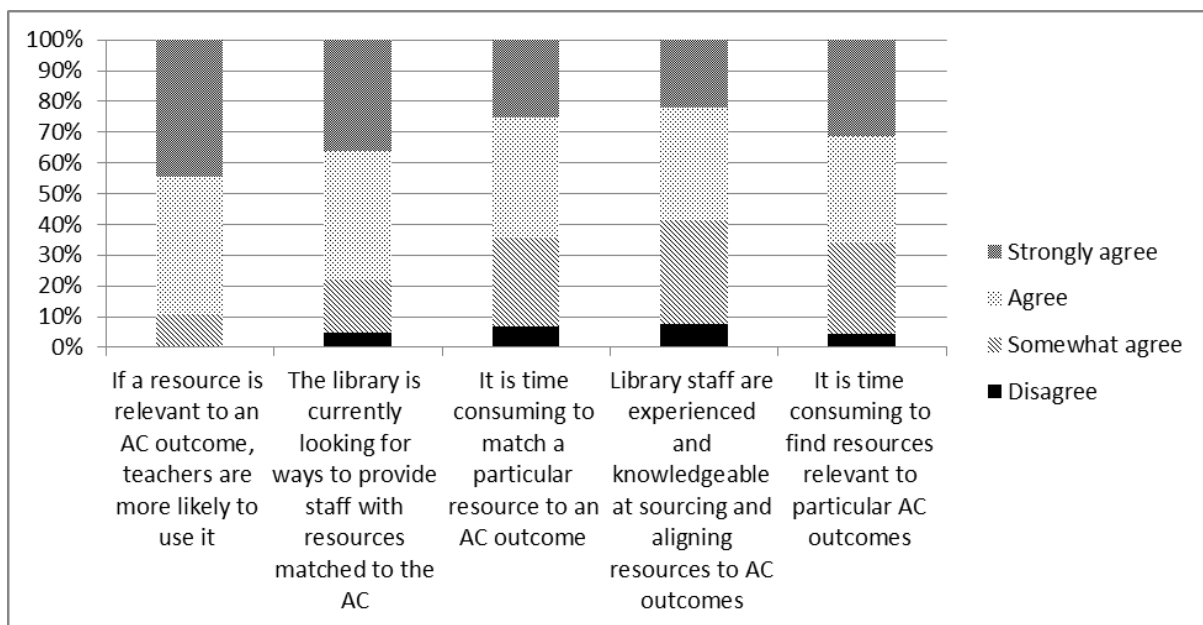

Figure 3 Perceptions of alignment (Question 8): Qualitative responses

Respondents from high-engagement libraries felt more strongly that teachers would utilise aligned resources. TLs saw greater benefits to the profile of the library and to

teaching and learning. Both TLs and respondents from high-engagement libraries felt more strongly that alignment would be of use to the school.

Over 95% of respondents agreed to some extent that their library was looking for ways to provide resource-alignment to teaching staff, and both TLs and respondents from high-engagement libraries were more likely to report this.

Table 2 Mean perceptions of alignment by Library Engagement and Teacher Librarian

		Library Engagement		Teacher Librarian	
	Total	Low	High	False	True
It would be of use to our school	3.48	3.42	3.53*	3.35	3.59**
It would increase the profile of the library	3.33	3.29	3.37	3.21	3.45**
Library staff would be able to add extra value to teaching and learning in the school	3.48	3.42	3.53	3.36	3.59**
If a resource is relevant to an AC outcome, teachers are more likely to use it	3.33	3.25	3.42*	3.29	3.38
The library is currently looking for ways to provide staff with resources matched to the AC	3.09	2.85	3.31**	2.99	3.18*
It is time consuming to match a particular resource to an AC outcome	2.83	2.77	2.89	2.73	2.92*
Library staff are experienced and knowledgeable at sourcing and aligning resources to AC outcomes	2.73	2.53	2.93**	2.55	2.91**
It is time consuming to find resources relevant to particular AC outcomes	2.94	2.95	2.92	2.77	3.08**

* F significant at $p=0.5$ or less
** F significant at $p=0.001$ or less

There was strong agreement with the statement that it was time-consuming aligning from the curriculum to a set of resources or from a resource to curriculum outcomes. TLs were more likely than their colleagues to be wary of the time required to perform alignment work. Nevertheless, respondents still indicated that they believed library staff were sufficiently experienced and qualified to perform alignment work (with 92.4% agreeing to some degree, and 22% strongly agreeing), although this was the least endorsed of this set of items. Both TLs and respondents from high-engagement libraries were more likely to endorse this item.

15

Alignment Issues

Table 3 displays responses to question nine, measuring perceived alignment issues, broken down by Library Engagement and Teacher Librarian groupings.

Respondents strongly indicated (77% to 79% of respondents) that they believed it was important that alignments be made to resources in appropriate learning areas and that they are appropriate to year-level. Suitability across learning areas was of less importance to TLs than their colleagues.

Table 3 Alignment issues by Library Engagement and Teacher Librarian: % endorsement

	Total	Teacher Librarian		Active Library	
		False	True	Low	High
Known or authoritative sources of alignment	51.7	47.6	55.78[a]	47.1	56.75[a]
Alignments in suitable learning areas or subjects	77.1	80.14	74.15[a]	74.74	79.24
Alignments in suitable year levels	79.7	80.82	78.57	77.13	82.7
The inclusion of alignments to curriculum frameworks other than the Australian Curriculum (for example, NSW Syllabus)	44.7	35.27	54.08[a]	40.61	49.13[a]
Alignments can be found or viewed in the local library catalogue	62.6	61.64	63.61	60.75	64.71
Sufficient amount of alignments for records in the local collection	42	42.47	41.5	37.2	46.37[a]
Alignments to free digital content	69.3	61.64	76.87[a]	65.19	74.05[a]
Accurate and well-applied alignments	65.7	61.3	70.07[a]	64.51	67.13

[a] Cells differ at p=0.5 or less

The least endorsed issue (42%) was the need for alignment to resources held in the local collection, although respondents from high-engagement libraries saw this as somewhat more important. A higher priority (69%) was placed on alignment to free digital content, and this was of even greater importance to TLs and respondents from high-engagement libraries.

The need for alignment to curricula other than the AC was also less endorsed (45%), but was seen as being somewhat more important by both TLs and respondents from high-engagement libraries.

Respondents put some importance on the accuracy of alignments (66%), but this was even more important to TLs. Whilst only half of respondents were concerned about the identity and authority of the source of alignments, this was of more importance to both TLs and respondents from high-engagement libraries.

Table 4 Mean demand for resources supporting AC learning areas (Question 10) by Library Engagement and Teacher Librarian

| | | Library Engagement | | Teacher Librarian | |
	Total	Low	High	False	True
English	2.61	2.47	2.74**	2.55	2.66
Mathematics	1.77	1.68	1.85*	1.88	1.65*
Science	2.24	2.14	2.34**	2.28	2.19
HASS	2.47	2.27	2.66**	2.37	2.57*
The Arts	1.6	1.48	1.71**	1.67	1.53*
Languages	1.11	1.03	1.2*	1.21	1.03*
Technologies	1.48	1.4	1.55*	1.55	1.4*
H&PE	1.46	1.36	1.57**	1.55	1.38*
Work Studies	0.9	0.85	0.96*	1.19	0.64**

* F significant at p=0.5 or less
** F significant at p=0.001 or less

Curriculum Priorities

Figure 4 displays responses to question ten, measuring perceived demand for resources supporting the AC learning areas. Table 4 displays responses broken down by Library Engagement and Teacher Librarian groupings. Cell means can be found in Table 12 in Appendix B. Only one significant interaction effect was observed (see below).

According to respondents, the greatest demand for library resources were from the AC learning areas English, HASS, and Science, with only 0.55%, 0.73%, and 1.1% claiming there was no demand, and 70.3%, 57.45%, and 42.57% expressing high demand, respectively. Respondents from high-engagement libraries felt the demand for these resources was even stronger. TLs felt there was greater demand for HASS resources compared with their non-TL colleagues.
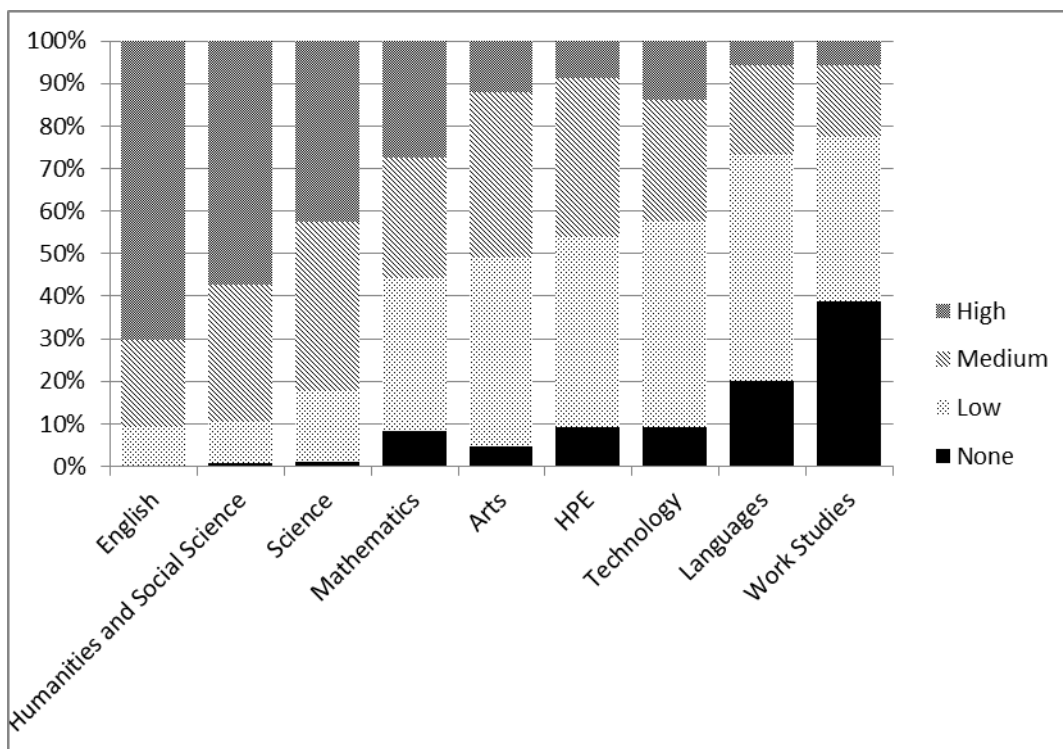
Figure 4 Demand for resources supporting AC learning areas: Qualitative responses

The least demand was for Languages and Work Studies resources, with 20.11% and 38.88% claiming no demand for these resources, and only 5.56% and 5.61% claiming high demand, respectively. TLs saw even less demand for these resources than did their non-TL colleagues. Respondents from high-engagement libraries saw higher demand for these resources than did those from low-engagement libraries.

18

They also conveyed higher demand for resources for Mathematics, The Arts,

Technologies, and HPE, whereas TLs tended to convey less demand for these.
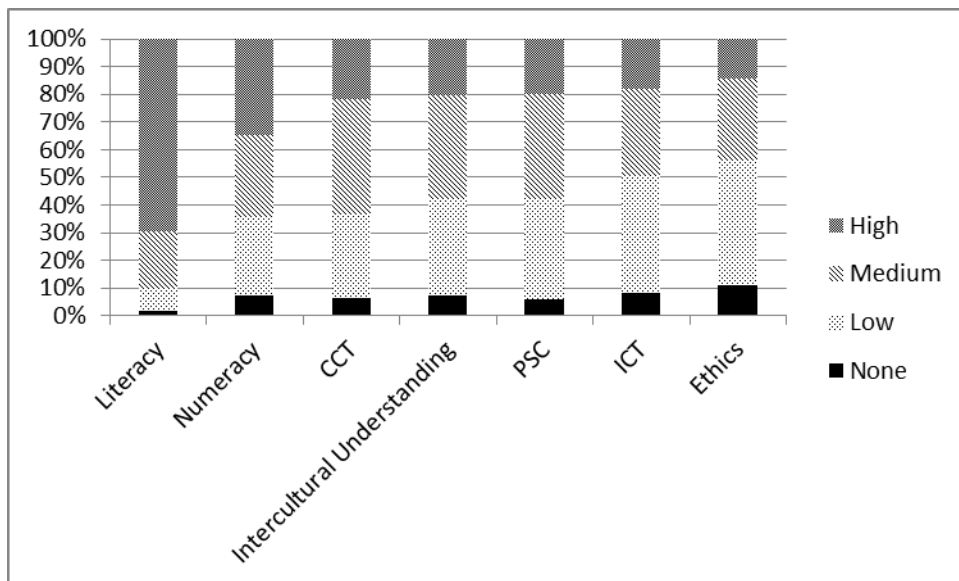
Figure 5 Demand for resources supporting AC general capabilities: Qualitative responses

An interaction effect was found whereby non-TLs in high-engagement schools rated

demand for H&PE resources more highly than other respondents.

Figure 5 displays responses to question eleven, measuring perceived demand for

resources supporting the AC general capabilities. Table 5 displays responses broken

down by Library Engagement and Teacher Librarian groupings. Cell means can be

found in Table 14 in Appendix B. No ANOVA found significant interaction effects.

Respondents from high-engagement libraries conveyed higher demand for

resources for all GCs compared to respondents from low-engagement libraries.

The greatest demand for resources was from Literacy and Numeracy, with only

1.83% and 7.37% reporting no demand, and 69.78% and 34.99% reporting high

demand, respectively. Compared with non-TLs, TLs reported less demand for

numeracy resources.

Table 5 Mean demand for resources supporting AC general capabilities (Question 11) by Library
Engagement and Teacher Librarian

	Total	Library Engagement		Teacher Librarian	
		Low	High	False	True
Literacy	2.59	2.51	2.67*	2.58	2.6
Numeracy	1.93	1.84	2.02*	2.06	1.82**
ICTC	1.6	1.45	1.75**	1.56	1.64
CCT	1.78	1.6	1.96**	1.8	1.77
PSC	1.73	1.57	1.89**	1.87	1.6**
Ethical Understanding	1.49	1.34	1.63**	1.59	1.39*
Intercultural Understanding	1.72	1.58	1.86**	1.73	1.71

* F significant at p=0.5 or less
** F significant at p=0.001 or less

The lowest demand for GC resources was for ICT Capabilities and Ethical

Understanding, and TLs felt the demand for Ethical Understanding resources was

even lower. They also reported lower demand for Personal and Social Capability

resources than did their non-TL colleagues.

Figure 6 displays responses to question twelve, measuring perceived demand for resources
supporting the AC cross-curriculum priorities. Table 6 displays responses broken down by Library
Engagement and Teacher Librarian groupings. Cell means can be found in Table 10 Alignment issues
by Library Engagement and Teacher Librarian: Number of endorsements (%) and inferential test
results

		Teacher Librarian				Active L
	Total	False	True	Chi-Square (df)	Low
Known or authoritative sources of alignment	303 (51.7%)	139 (47.6%)	164 (55.78%)	3.93 (1)*	138 (47
Alignments in suitable learning areas or subjects	452 (77.1%)	234 (80.14%)	218 (74.15%)	2.98 (1)	219 (74
Alignments in suitable year levels	467 (79.7%)	236 (80.82%)	231 (78.57%)	0.46 (1)	226 (77
The inclusion of alignments to curriculum frameworks other than the Australian Curriculum (for example, NSW Syllabus)	262 (44.7%)	103 (35.27%)	159 (54.08%)	20.96 (1)**	119 (40
Alignments can be found or viewed in the local library catalogue	367 (62.6%)	180 (61.64%)	187 (63.61%)	0.24 (1)	178 (60
Sufficient amount of alignments for records in the local collection	246 (42%)	124 (42.47%)	122 (41.5%)	0.06 (1)	109 (37

20

Alignments to free digital content	406 (69.3%)	180 (61.64%)	226 (76.87%)	15.96 (1)**	191 (65
Accurate and well-applied alignments	385 (65.7%)	179 (61.3%)	206 (70.07%)	5 (1)*	189 (64

* Chi-square significant at p=0.5 or less
** Chi-square significant at p=0.001 or less

Table 11 Demand for resources supporting AC learning areas (Question 10), general capabilities (Question 11) and cross-curriculum priorities (Question 12) by Library Engagement and Teacher Librarian: Mean (SD) and inferential test main effects

	Library Engagement				Teacher Librarian		
	Total	Low	High	*F*(df)	False	True	*F*(df)
English	2.61	2.47	2.74	22.72	2.55	2.66	1.97
	(0.668)	(0.748)	(0.545)	(1,566)**	(0.697)	(0.635)	(1,566)
Mathematics	1.77	1.68	1.85	6.29	1.88	1.65	10.04
	(0.952)	(0.961)	(0.938)	(1,564)*	(0.969)	(0.923)	(1,564)*
Science	2.24	2.14	2.34	11.08	2.28	2.19	3.39
	(0.765)	(0.788)	(0.728)	(1,562)**	(0.775)	(0.752)	(1,562)
HASS	2.47	2.27	2.66	44.07	2.37	2.57	7.76
	(0.696)	(0.752)	(0.575)	(1,567)**	(0.741)	(0.636)	(1,567)*
The Arts	1.6	1.48	1.71	16.82	1.67	1.53	6.98
	(0.763)	(0.737)	(0.77)	(1,561)**	(0.8)	(0.72)	(1,561)*
Languages	1.11	1.03	1.2	7.99	1.21	1.03	9.12
	(0.787)	(0.777)	(0.789)	(1,554)*	(0.835)	(0.729)	(1,554)*
Technologies	1.48	1.4	1.55	5.3,	1.55	1.4	5.4
	(0.843)	(0.842)	(0.84)	(1,556)*	(0.822)	(0.858)	(1,556)*
H&PE	1.46	1.36	1.57	12.74	1.55	1.38	8.84
	(0.788)	(0.73)	(0.829)	(1,557)**	(0.795)	(0.773)	(1,557)*
Work Studies	0.9	0.85	0.96	5.45	1.19	0.64	58.62
	(0.887)	(0.855)	(0.917)	(1,500)*	(0.933)	(0.749)	(1,500)**
Literacy	2.59	2.51	2.67	7 (1,563)*	2.58	2.6	0.01
	(0.717)	(0.782)	(0.638)		(0.713)	(0.722)	(1,563)
Numeracy	1.93	1.84	2.02	6.95	2.06	1.82	11.14
	(0.961)	(0.995)	(0.918)	(1,560)*	(0.943)	(0.963)	(1,560)**
ICTC	1.6	1.45	1.75	16.22	1.56	1.64	0.34
	(0.883)	(0.891)	(0.851)	(1,557)**	(0.849)	(0.913)	(1,557)
CCT	1.78	1.6	1.96	27.89	1.8	1.77	0.94
	(0.86)	(0.877)	(0.804)	(1,555)**	(0.872)	(0.85)	(1,555)
PSC	1.73	1.57	1.89	24.91	1.87	1.6	17.94
	(0.855)	(0.838)	(0.844)	(1,555)**	(0.846)	(0.846)	(1,555)**
Ethical Understanding	1.49	1.34	1.63	20	1.59	1.39	9.71
	(0.867)	(0.855)	(0.855)	(1,547)**	(0.861)	(0.864)	(1,547)*
Intercultural Understanding	1.72	1.58	1.86	15.68	1.73	1.71	0.55
	(0.87)	(0.874)	(0.844)	(1,548)**	(0.859)	(0.881)	(1,548)
ATSIHC	1.98	1.87	2.1	10.24	1.93	2.03	1.29
	(0.819)	(0.807)	(0.816)	(1,565)**	(0.791)	(0.843)	(1,565)
AAEA	1.72	1.57	1.88	21.45	1.71	1.74	0.02
	(0.823)	(0.823)	(0.793)	(1,564)**	(0.83)	(0.817)	(1,564)
Sustainability	1.93	1.79	2.08	22.41	2.01	1.86	7.67
	(0.811)	(0.845)	(0.748)	(1,561)**	(0.808)	(0.808)	(1,561)*

* F significant at p=0.5 or less
** F significant at p=0.001 or less

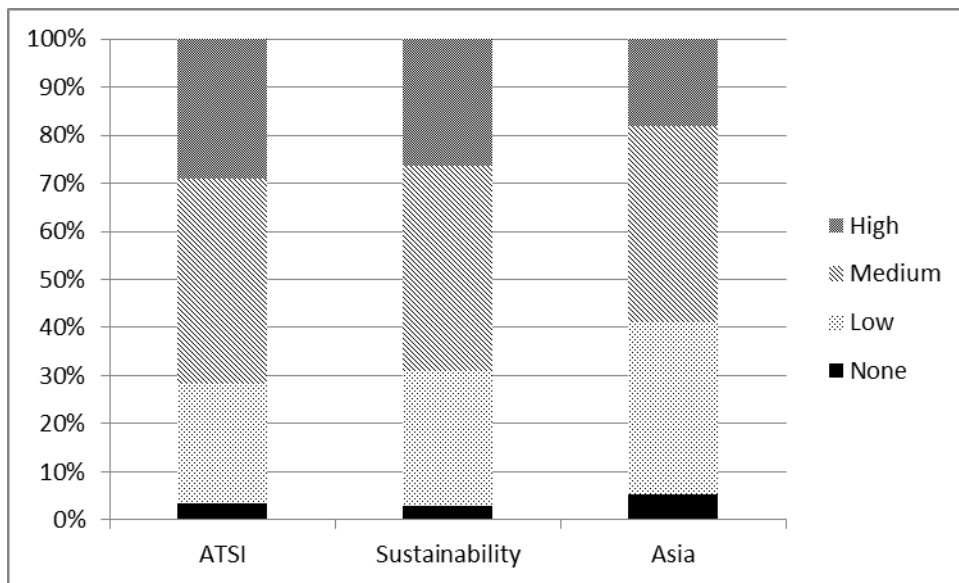Table 12 in Appendix B. No ANOVA found significant interaction effects.

Figure 6 Demand for resources supporting AC cross-curriculum priorities: Qualitative responses

Reported demand for resources aligned to AC CCPs was relatively even with between 2.77% and 5.14% claiming there was no demand, and between 18.17% and 29.12% claiming high demand, with marginally less support for resources relating to AAEA.

Respondents from high-engagement libraries conveyed higher demand for resources for all CCPs compared to respondents from low-engagement libraries. TLs reported lower demand for Sustainability than did non-TLs.

Table 6 Mean demand for resources supporting AC cross-curriculum priorities (Question 12) by Library Engagement and Teacher Librarian

		Library Engagement		Teacher Librarian	
	Total	Low	High	False	True
ATSIHC	1.98	1.87	2.1**	1.93	2.03
AAEA	1.72	1.57	1.88**	1.71	1.74
Sustainability	1.93	1.79	2.08**	2.01	1.86*

* F significant at p=0.5 or less
** F significant at p=0.001 or less

23

Alignment Practices

Figure 7 displays responses to question thirteen, examining responses to alignment practices. Table 7 displays responses broken down by Library Engagement and Teacher Librarian groupings. Cell means can be found in

Table 13 Alignment options (Question 13) by Library Engagement and Teacher Librarian: Mean (SD) and inferential test main effects

	Total	Library Engagement			Teacher Librarian		
		Low	High	*F*(df)	False	True	*F*(df)
Use alignments created by SCIS	4.2 (0.864)	4.06 (0.959)	4.34 (0.732)	13.31 (1,564)**	4.06 (0.85)	4.33 (0.858)	11.27 (1,564)**
Provide feedback about the alignments provided by SCIS	3.58 (0.93)	3.44 (0.975)	3.73 (0.86)	11.59 (1,548)**	3.46 (0.926)	3.69 (0.921)	6.46 (1,548)*
Use alignments provided to SCIS by other school libraries	3.58 (0.965)	3.48 (0.994)	3.68 (0.926)	4.64 (1,545)*	3.49 (0.898)	3.66 (1.017)	3.54 (1,545)
Contribute your own alignments back to SCIS for use by other school libraries	3.09 (0.992)	2.93 (1.014)	3.25 (0.944)	13.01 (1,542)**	2.92 (0.966)	3.24 (0.993)	11.6 (1,542)**

* F significant at p=0.5 or less
** F significant at p=0.001 or less

Table 14 in Appendix B. No ANOVA found significant interaction effects.

Respondents were highly supportive of using alignments created by SCIS, with only 1.9% claiming it was unlikely or highly unlikely they would do so and 78.8% stating it was highly likely.

Opinions about generating crowd-sourced data was more moderate, with 8.2% stating they were unlikely or highly unlikely to do so, and 31.9% claiming it was likely or highly likely.
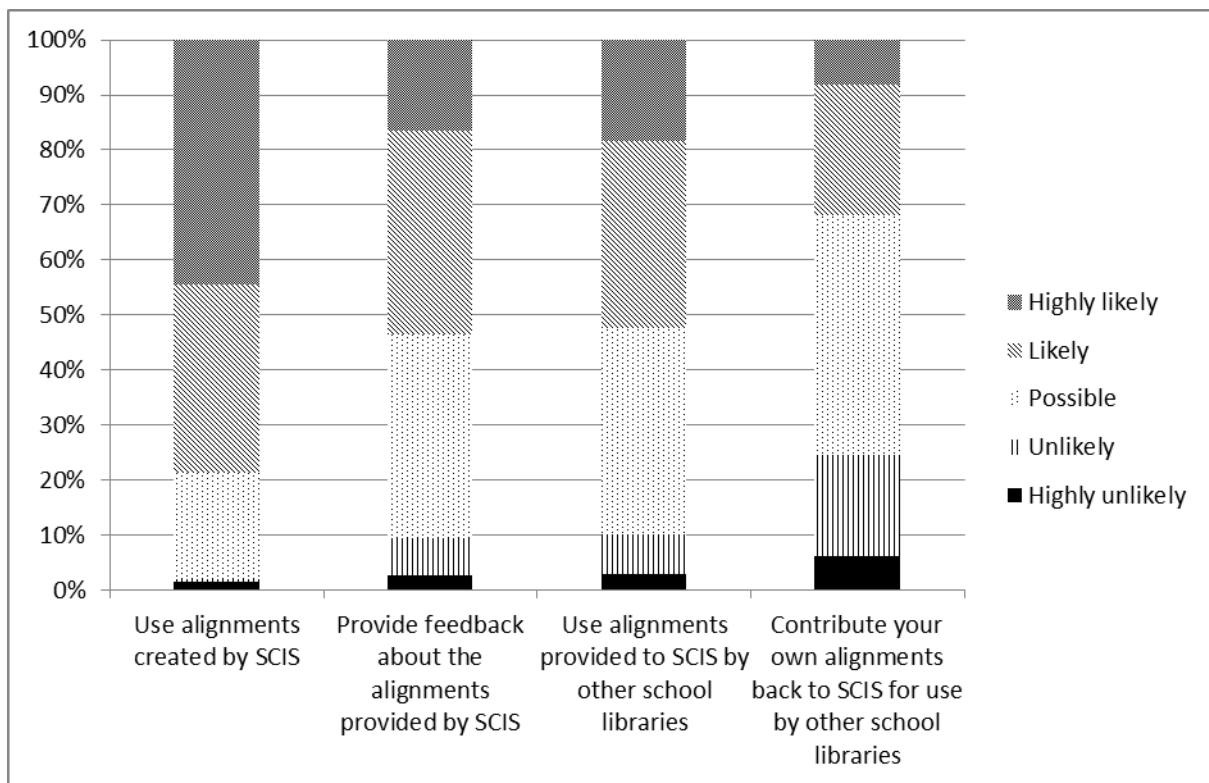
Figure 7 Alignment practices (Question 13): Qualitative responses

Opinions about use of crowd-sourced data was also somewhat guarded, with almost 10% of respondents stating it was unlikely or highly unlikely they would do so and approximately half stating they were likely or highly likely to do so. Respondent's response to providing feedback to SCIS about crowd-sourced alignments was similar.

TLs and respondents from high-engagement libraries were more positive, on the whole, about all four practices, with both subgroups reporting they were more likely to use SCIS alignments, contribute their own alignments, and provide feedback about crowd-sourced alignments. Respondents from high-engagement libraries were also more enthusiastic about use of crowd-sourced alignments.

Table 7 Alignment practices by Library Engagement and Teacher Librarian: Mean (SD) and inferential test results

| | Total | Library Engagement | | Teacher Librarian | |
		Low	High	False	True
Use alignments created by SCIS	4.2	4.06	4.34**	4.06	4.33**
Provide feedback about the alignments provided by SCIS	3.58	3.44	3.73**	3.46	3.69*
Use alignments provided to SCIS by other school libraries	3.58	3.48	3.68*	3.49	3.66
Contribute your own alignments back to SCIS for use by other school libraries	3.09	2.93	3.25**	2.92	3.24**

* F significant at p=0.5 or less
** F significant at p=0.001 or less

DISCUSSION

The survey revealed a high demand for alignment amongst Australian school libraries, consistent with previous findings by Kennedy (2013) and Softlink (2014).

Almost all libraries surveyed were actively looking to utilise this kind of data to some degree, and felt that it would benefit the school, enable the library to support teaching and learning, improve staff usage of resources, and increase the library profile. Whilst respondents generally felt they had the required knowledge and experience to do alignment work themselves, they were also aware of how time-intensive it is.

Respondents felt strongly that any resource-alignment data would need to be applied accurately and appropriately across learning areas and year-levels. English, HASS and Science were the learning areas of greatest demand, as well as general capabilities of literacy and numeracy. Respondents were less concerned about

27

alignments for resources in their local collection than they were for well-aligned free digital content.

Respondents expressed a strong desire for alignment data from SCIS, being an authoritative central agency, but were not strongly opposed to using or providing feedback about alignments made by their colleagues. They were a little more circumspect about creating and contributing their own alignments, and this makes sense given their awareness of the time demands involved.

This paper confirmed findings by Chadwick (2016a) that both TLs and respondents from high-engagement libraries display distinct and independent perspectives on alignment. The subgroups themselves were also relatively independent: TLs were more prevalent in high-engagement libraries, but were also operating in low-engagement libraries, and high-engagement libraries were more likely to have a TL but there were also high-engagement libraries without a TL.

TLs were highly enthusiastic about the value of alignment and were more likely to report that their library was actively seeking to support it. Whilst they were more likely to see themselves or their staff as being capable to perform this kind of work, they were also more sober about the time demands of doing so.

In terms of alignment processes, TLs were more enthusiastic about using SCIS alignments, contributing their own alignments and providing feedback about alignments, but were no more enthusiastic about using crowd-sourced data than other respondents. This may have been related to their increased concern about the authoritativeness and quality of alignments.

28

Whilst far from unconcerned, TLs expressed less concern about the adequacy of learning areas covered by alignments. They felt there was lower demand for alignment across all learning areas except for the high demand areas – English, HASS and Science. This may reflect greater insight into how the library is utilised.

Compared to low-engagement libraries, respondents from high-engagement libraries perceived alignment as being of greater use to the school and to have benefits such as increased use of resources by staff. They were also more likely to report that their library was actively seeking to support it and that library staff were capable to perform alignment work themselves.

Like TLs, high-engagement libraries were concerned about free digital content, but unlike TLs they were also more concerned about alignment for local materials. Also unlike TLs, they were more even in their demand for materials across all learning areas, GCs, and CCPs. Like TLs, high-engagement libraries were more enthusiastic about creating and providing feedback about crowd-sourced alignments, but they didn't share the same degree of hesitance about using such data.

Whilst there was some support for alignment to curricula other than the AC, this was one of the issues of least concern to respondents. Both TLs and high-engagement libraries were somewhat more interested in other curricula. This may reflect their greater awareness of curriculum issues (such as distinctions between AC and jurisdictional curricula), or the greater incidence of these subgroups in schools that support curricula such as International Baccalaureate.

PROOF OF CONCEPT

The viability of crowd-sourced alignment metadata is dependent on the technical infrastructure to capture the data from users, collate it, and deploy it in useful ways.

A proof of concept for such as system was developed and installed on the SCIS test OPAC. The Curriculum Tagger widget demonstrates a particular use-case in which users begin with a given resource and identify AC outcomes to which the resource may be aligned.

Figure 9 in Appendix C demonstrates where the widget sits, below the record metadata on a record details page of the OPAC. Having found or discovered the resource, users are able to click on the widget to 'activate' it. Figure 10 in Appendix C demonstrates the widget once it has been activated.

Once activated, a user is able to search for codes or text of an Australian Curriculum content description (see Figure 8A). After selecting an aligned content description, they are able to 'tag it' to the resource by clicking the associated button (Figure 8B & C). The user is then able to add additional tags, remove tags, or download the MARC record with the details of the tagged curriculum objective encoded in MARC 658 fields. Each tag made by users is logged in the SCIS database for analysis or, potentially, distribution to other users.

Figure 8 Curriculum Tagger actions
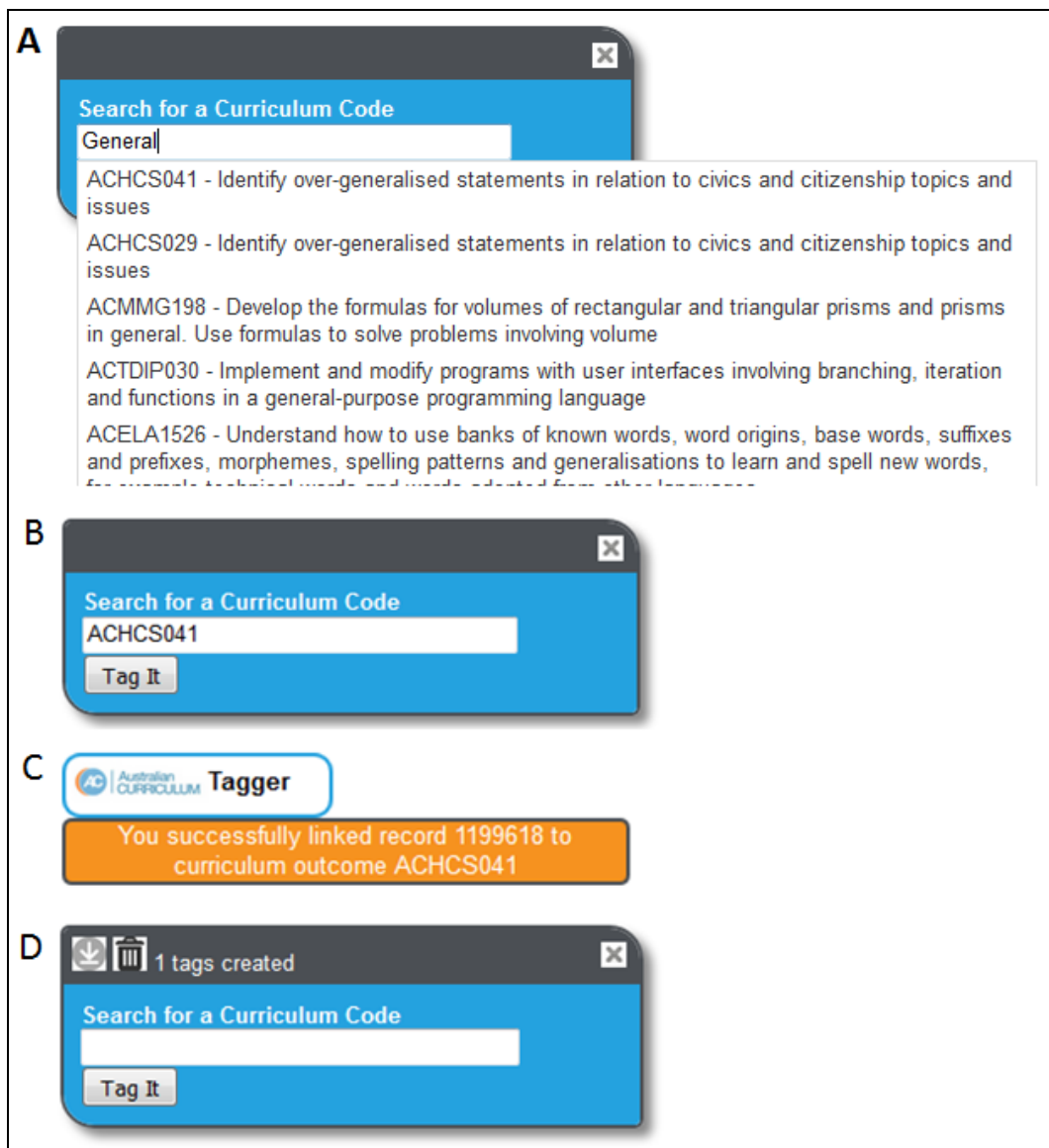
The Widget works from live AC data obtained from the AC linked-data endpoint,

ensuring that AC data is authoritative and up-to-date.

CONCLUSIONS

This paper further analysed data from a SCIS survey examining attitudes towards

alignment amongst Australian school libraries. It confirmed previous findings about

the high demand for alignment data (eg Kennedy 2013), and that this demand is

strongly driven by both teacher librarians and libraries that are already heavily engaged in curriculum.

Aligning resources to curriculum is time-consuming and costly, and libraries are aware of this. For SCIS, the current findings support its role as a central agency for distributing this kind of data. Alignments should focus on free digital content, predominantly in the domains of English, HASS, Science, Literacy, and Numeracy.

The next step for the SCIS curriculum tagger widget is to perform usability testing and examine the quality of resulting alignments both with users and against other alignment methodologies. Given respondents' hesitance over contributing their own alignment data, it will be important to monitor uptake by SCIS subscribers, and supplement SCIS's offerings with alignments derived from other sources and methodologies, as discussed by Chadwick (2016b).

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33

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APPENDIX A – QUESTIONNAIRE ITEMS

Question	Options/Sub-items	Response Type
1 What is your current role?	Teacher Librarian; Librarian; Library Technician; School assistant/library officer; Teacher; Principal/Assistant Principal/Other	Single choice
2 Do you currently work in your school library?	Yes; No	Single choice
3 School level	Primary; Secondary; Combined Primary/Secondary; Other	Single choice
4 School sector	Government; Catholic; Independent; Other	Single choice
5 School location	ACT; NSW; NT; QLD; SA; Tas; Vic; WA	Single choice
6 How often does the library do the following?	a. Research or inquire about staff resource needs b. Recommend resources to staff c. Put resource packages together for teachers or departments d. Review the collection to find resources that are relevant to a particular Australian Curriculum outcome e. Purchase new resources because they are relevant to a particular Australian Curriculum outcome f. Examine the collection for gaps in Australian Curriculum coverage g. Make special collections of resources aligned to Australian Curriculum outcomes (eg Libguides, reading lists, class lists) h. Make special collections of resources for year levels	Four point scale: Never to Weekly
7 If SCIS provided your library with data about how resources align to the Australian Curriculum...	a. It would be of use to our school b. It would increase the profile of the library c. Library staff would be able to add extra value to teaching and learning in the school	Four point scale: Disagree to Strongly Agree
8 Please rate your agreement with the following statements about the library and the Australian Curriculum (AC).	a. If a resource is relevant to an AC outcome, teachers are more likely to use it b. The library is currently looking for ways to provide staff with resources matched to the AC c. It is time consuming to match a particular resource to an AC outcome d. Library staff are experienced and knowledgeable at sourcing and aligning resources to AC outcomes e. It is time consuming to find resources relevant to particular AC outcomes	Four point scale: Disagree to Strongly Agree
9 What would influence your decision to use data that aligns resources to the Australian Curriculum? (Please select all that apply)	a. Known or authoritative sources of alignment b. Alignments in suitable learning areas or subjects c. Alignments in suitable year levels d. The inclusion of alignments to curriculum frameworks other than the Australian Curriculum (for example, NSW Syllabus) e. Alignments can be found or viewed in the local library catalogue f. Sufficient amount of alignments for records in the local collection g. Alignments to free digital content	Multiple choices

	Question	Options/Sub-items	Response Type
		h. Accurate and well-applied alignments	
10	What is the level of demand for resources in these subject areas?	a. English b. Mathematics c. Science d. Humanities and Social Sciences e. The Arts f. Languages g. Technologies h. Health and PE i. Work Studies	Four point scale: None, Low, Medium, High
11	What is the level of demand for resources for these general capabilities?	a. Literacy b. Numeracy c. Information and Communication Technology (ICT) Capability d. Critical and Creative Thinking e. Personal and Social Capability f. Ethical Understanding g. Intercultural Understanding	Four point scale: None, Low, Medium, High
12	What is the level of demand for resources for these cross-curriculum priorities?	a. Aboriginal and Torres Strait Islander Histories and Cultures b. Asia and Australia's Engagement with Asia c. Sustainability	Four point scale: None, Low, Medium, High
13	How likely is it that your library would do the following:	a. Use alignments created by SCIS b. Provide feedback about the alignments provided by SCIS c. Use alignments provided to SCIS by other school libraries d. Contribute your own alignments back to SCIS for use by other school libraries	Five point scale: Unlikely to Highly likely

APPENDIX B – DESCRIPTIVE STATISTICS AND INFERENTIAL TEST RESULTS

Table 8 Perceptions of alignment (Questions 7 & 8) by Library Engagement and Teacher Librarian: Mean (SD) and inferential test main effects

	Total	Library Engagement			Teacher Librarian		
		Low	High	*F*(df)	False	True	*F*(df)
It would be of use to our school	3.48 (0.66)	3.42 (0.7)	3.53 (0.614)	2.73 (1,566)*	3.35 (0.693)	3.59 (0.606)	17.54 (1,566)**
It would increase the profile of the library	3.33 (0.811)	3.29 (0.822)	3.37 (0.801)	0.74 (1,555)	3.21 (0.81)	3.45 (0.797)	11.48 (1,555)**
Library staff would be able to add extra value to teaching and learning in the school	3.48 (0.689)	3.42 (0.732)	3.53 (0.641)	2.27 (1,565)	3.36 (0.701)	3.59 (0.66)	15.42 (1,565)**
If a resource is relevant to an AC outcome, teachers are more likely to use it	3.33 (0.686)	3.25 (0.716)	3.42 (0.647)	7.57 (1,561)*	3.29 (0.668)	3.38 (0.702)	1.72 (1,561)
The library is currently looking for ways to provide staff with resources matched to the AC	3.09 (0.85)	2.85 (0.913)	3.31 (0.716)	40.9 (1,551)**	2.99 (0.861)	3.18 (0.829)	4.86 (1,551)*
It is time consuming to match a particular resource to an AC outcome	2.83 (0.888)	2.77 (0.813)	2.89 (0.954)	1.68 (1,541)	2.73 (0.856)	2.92 (0.907)	5.65 (1,541)*
Library staff are experienced and knowledgeable at sourcing and aligning resources to AC outcomes	2.73 (0.887)	2.53 (0.942)	2.93 (0.784)	24.63 (1,558)**	2.55 (0.851)	2.91 (0.885)	20.2 (1,558)**
It is time consuming to find resources relevant to particular AC outcomes	2.94 (0.884)	2.95 (0.887)	2.92 (0.881)	0.59 (1,550)	2.77 (0.864)	3.08 (0.876)	18.05 (1,550)**

* F significant at p=0.5 or less
** F significant at p=0.001 or less

Table 9 Perceptions of alignment (Questions 7 & 8) by Library Engagement and Teacher Librarian: Cell Means (SD) and inferential test results for interaction effects

	Library Engagement				
	Low		High		
	Teacher Librarian		Teacher Librarian		
	False	True	False	True	*F* Interaction (df)
It would be of use to our school	3.3 (0.695)	3.56 (0.684)	3.42 (0.688)	3.62 (0.536)	0.25 (1,566)
It would increase the profile of the library	3.2 (0.769)	3.39 (0.872)	3.22 (0.861)	3.49 (0.73)	0.36 (1,555)
Library staff would be able to add extra value to teaching and learning in the school	3.31 (0.719)	3.56 (0.728)	3.42 (0.676)	3.62 (0.6)	0.14 (1,565)
If a resource is relevant to an AC outcome, teachers are more likely to use it	3.19 (0.697)	3.33 (0.733)	3.41 (0.612)	3.42 (0.675)	1.35 (1,561)
The library is currently looking for ways to provide staff with resources matched to the AC	2.74 (0.896)	2.98 (0.921)	3.27 (0.725)	3.34 (0.71)	1.26 (1,551)
It is time consuming to match a particular resource to an AC outcome	2.69 (0.778)	2.85 (0.846)	2.77 (0.949)	2.98 (0.952)	0.11 (1,541)
Library staff are experienced and knowledgeable at sourcing and aligning resources to AC outcomes	2.38 (0.893)	2.72 (0.969)	2.76 (0.75)	3.06 (0.786)	0.07 (1,558)
It is time consuming to find resources relevant to particular AC outcomes	2.78 (0.856)	3.14 (0.885)	2.77 (0.877)	3.04 (0.87)	0.38 (1,550)

1

Table 10 Alignment issues by Library Engagement and Teacher Librarian: Number of endorsements (%) and inferential test results

	Total	Teacher Librarian			Active Library		
		False	True	Chi-Square (df)	Low	High	Chi-Square
Known or authoritative sources of alignment	303 (51.7%)	139 (47.6%)	164 (55.78%)	3.93 (1)*	138 (47.1%)	164 (56.75%)	5.43 (1)*
Alignments in suitable learning areas or subjects	452 (77.1%)	234 (80.14%)	218 (74.15%)	2.98 (1)	219 (74.74%)	229 (79.24%)	1.66 (1)
Alignments in suitable year levels	467 (79.7%)	236 (80.82%)	231 (78.57%)	0.46 (1)	226 (77.13%)	239 (82.7%)	2.81 (1)
The inclusion of alignments to curriculum frameworks other than the Australian Curriculum (for example, NSW Syllabus)	262 (44.7%)	103 (35.27%)	159 (54.08%)	20.96 (1)**	119 (40.61%)	142 (49.13%)	4.27 (1)*
Alignments can be found or viewed in the local library catalogue	367 (62.6%)	180 (61.64%)	187 (63.61%)	0.24 (1)	178 (60.75%)	187 (64.71%)	0.97 (1)
Sufficient amount of alignments for records in the local collection	246 (42%)	124 (42.47%)	122 (41.5%)	0.06 (1)	109 (37.2%)	134 (46.37%)	5.03 (1)*
Alignments to free digital content	406 (69.3%)	180 (61.64%)	226 (76.87%)	15.96 (1)**	191 (65.19%)	214 (74.05%)	5.4 (1)*
Accurate and well-applied alignments	385 (65.7%)	179 (61.3%)	206 (70.07%)	5 (1)*	189 (64.51%)	194 (67.13%)	0.45 (1)

* Chi-square significant at p=0.5 or less
** Chi-square significant at p=0.001 or less

2

Table 11 Demand for resources supporting AC learning areas (Question 10), general capabilities (Question 11) and cross-curriculum priorities (Question 12) by Library Engagement and Teacher Librarian: Mean (SD) and inferential test main effects

		Library Engagement				Teacher Librarian		
	Total	Low	High	*F*(df)	False	True	*F*(df)
English	2.61 (0.668)	2.47 (0.748)	2.74 (0.545)	22.72 (1,566)**	2.55 (0.697)	2.66 (0.635)	1.97 (1,566)
Mathematics	1.77 (0.952)	1.68 (0.961)	1.85 (0.938)	6.29 (1,564)*	1.88 (0.969)	1.65 (0.923)	10.04 (1,564)*
Science	2.24 (0.765)	2.14 (0.788)	2.34 (0.728)	11.08 (1,562)**	2.28 (0.775)	2.19 (0.752)	3.39 (1,562)
HASS	2.47 (0.696)	2.27 (0.752)	2.66 (0.575)	44.07 (1,567)**	2.37 (0.741)	2.57 (0.636)	7.76 (1,567)*
The Arts	1.6 (0.763)	1.48 (0.737)	1.71 (0.77)	16.82 (1,561)**	1.67 (0.8)	1.53 (0.72)	6.98 (1,561)*
Languages	1.11 (0.787)	1.03 (0.777)	1.2 (0.789)	7.99 (1,554)*	1.21 (0.835)	1.03 (0.729)	9.12 (1,554)*
Technologies	1.48 (0.843)	1.4 (0.842)	1.55 (0.84)	5.3, (1,556)*	1.55 (0.822)	1.4 (0.858)	5.4 (1,556)*
H&PE	1.46 (0.788)	1.36 (0.73)	1.57 (0.829)	12.74 (1,557)**	1.55 (0.795)	1.38 (0.773)	8.84 (1,557)*
Work Studies	0.9 (0.887)	0.85 (0.855)	0.96 (0.917)	5.45 (1,500)*	1.19 (0.933)	0.64 (0.749)	58.62 (1,500)**
Literacy	2.59 (0.717)	2.51 (0.782)	2.67 (0.638)	7 (1,563)*	2.58 (0.713)	2.6 (0.722)	0.01 (1,563)
Numeracy	1.93 (0.961)	1.84 (0.995)	2.02 (0.918)	6.95 (1,560)*	2.06 (0.943)	1.82 (0.963)	11.14 (1,560)**
ICTC	1.6 (0.883)	1.45 (0.891)	1.75 (0.851)	16.22 (1,557)**	1.56 (0.849)	1.64 (0.913)	0.34 (1,557)
CCT	1.78 (0.86)	1.6 (0.877)	1.96 (0.804)	27.89 (1,555)**	1.8 (0.872)	1.77 (0.85)	0.94 (1,555)
PSC	1.73 (0.855)	1.57 (0.838)	1.89 (0.844)	24.91 (1,555)**	1.87 (0.846)	1.6 (0.846)	17.94 (1,555)**
Ethical Understanding	1.49 (0.867)	1.34 (0.855)	1.63 (0.855)	20 (1,547)**	1.59 (0.861)	1.39 (0.864)	9.71 (1,547)*
Intercultural Understanding	1.72 (0.87)	1.58 (0.874)	1.86 (0.844)	15.68 (1,548)**	1.73 (0.859)	1.71 (0.881)	0.55 (1,548)
ATSIHC	1.98 (0.819)	1.87 (0.807)	2.1 (0.816)	10.24 (1,565)**	1.93 (0.791)	2.03 (0.843)	1.29 (1,565)
AAEA	1.72 (0.823)	1.57 (0.823)	1.88 (0.793)	21.45 (1,564)**	1.71 (0.83)	1.74 (0.817)	0.02 (1,564)
Sustainability	1.93 (0.811)	1.79 (0.845)	2.08 (0.748)	22.41 (1,561)**	2.01 (0.808)	1.86 (0.808)	7.67 (1,561)*

* F significant at p=0.5 or less
** F significant at p=0.001 or less

3

Table 12 Demand for resources supporting AC learning areas (Question 10), general capabilities (Question 11) and cross-curriculum priorities (Question 12) by Library Engagement and Teacher Librarian: Cell Means (SD) and inferential test results for interaction effects

	Library Engagement				
	Low		High		
	Teacher Librarian		Teacher Librarian		
	False	True	False	True	*F* Interaction (df)
English	2.41 (0.771)	2.55 (0.716)	2.73 (0.544)	2.75 (0.547)	1.03 (1,566)
Mathematics	1.76 (0.974)	1.59 (0.941)	2.04 (0.944)	1.71 (0.909)	1.09 (1,564)
Science	2.19 (0.794)	2.08 (0.78)	2.41 (0.736)	2.28 (0.72)	0.03 (1,562)
Humanities and Social Sciences	2.15 (0.772)	2.42 (0.704)	2.63 (0.604)	2.68 (0.552)	3.79 (1,567)
The Arts	1.5 (0.781)	1.45 (0.684)	1.88 (0.778)	1.59 (0.744)	3.41 (1,561)
Languages	1.08 (0.807)	0.98 (0.742)	1.36 (0.847)	1.07 (0.719)	2.07 (1,554)
Technologies	1.47 (0.833)	1.32 (0.848)	1.65 (0.802)	1.47 (0.863)	0.02 (1,556)
Health and PE	1.37 (0.756)	1.34 (0.702)	1.77 (0.79)	1.41 (0.827)	6.16 (1,557)*
Work Studies	1.09 (0.923)	0.58 (0.68)	1.33 (0.933)	0.69 (0.803)	0.78 (1,500)
Literacy	2.47 (0.802)	2.56 (0.757)	2.72 (0.553)	2.63 (0.694)	2.19 (1,563)
Numeracy	1.93 (0.977)	1.74 (1.01)	2.23 (0.874)	1.87 (0.924)	1.12 (1,560)
Information and Communication Technology (ICT) Capability	1.4 (0.857)	1.51 (0.928)	1.77 (0.796)	1.74 (0.891)	0.92 (1,557)
Critical and Creative Thinking	1.57 (0.934)	1.63 (0.811)	2.08 (0.7)	1.88 (0.866)	2.95 (1,555)
Personal and Social Capability	1.67 (0.852)	1.46 (0.81)	2.11 (0.776)	1.72 (0.858)	1.53 (1,555)
Ethical Understanding	1.39 (0.886)	1.28 (0.819)	1.83 (0.766)	1.49 (0.89)	2.57 (1,547)
Intercultural Understanding	1.54 (0.882)	1.62 (0.868)	1.97 (0.773)	1.78 (0.888)	3.13 (1,548)
Aboriginal and Torres Strait Islander Histories and Cultures	1.83 (0.796)	1.91 (0.821)	2.05 (0.77)	2.13 (0.85)	.001 (1,565)
Asia and Australia's Engagement with Asia	1.54 (0.81)	1.6 (0.841)	1.93 (0.808)	1.85 (0.782)	1.05 (1,564)
Sustainability	1.82 (0.849)	1.74 (0.841)	2.25 (0.687)	1.96 (0.769)	2.47 (1,561)

* F significant at p=0.013

4

Table 13 Alignment options (Question 13) by Library Engagement and Teacher Librarian: Mean (SD) and inferential test main effects

	Library Engagement				Teacher Librarian		
	Total	Low	High	F(df)	False	True	F(df)
Use alignments created by SCIS	4.2 (0.864)	4.06 (0.959)	4.34 (0.732)	13.31 (1,564)**	4.06 (0.85)	4.33 (0.858)	11.27 (1,564)**
Provide feedback about the alignments provided by SCIS	3.58 (0.93)	3.44 (0.975)	3.73 (0.86)	11.59 (1,548)**	3.46 (0.926)	3.69 (0.921)	6.46 (1,548)*
Use alignments provided to SCIS by other school libraries	3.58 (0.965)	3.48 (0.994)	3.68 (0.926)	4.64 (1,545)*	3.49 (0.898)	3.66 (1.017)	3.54 (1,545)
Contribute your own alignments back to SCIS for use by other school libraries	3.09 (0.992)	2.93 (1.014)	3.25 (0.944)	13.01 (1,542)**	2.92 (0.966)	3.24 (0.993)	11.6 (1,542)**

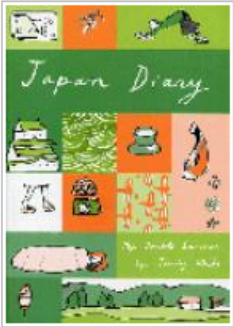* F significant at p=0.5 or less
** F significant at p=0.001 or less

Table 14 Alignment options (Question 13) by Library Engagement and Teacher Librarian: Cell Means (SD) and inferential test results for interaction effects

	Library Engagement				
	Low		High		
	Teacher Librarian		Teacher Librarian		
	False	True	False	True	F Interaction (df)
Use alignments created by SCIS	3.94 (0.905)	4.19 (1.005)	4.21 (0.752)	4.44 (0.704)	0.02 (1,564)
Provide feedback about the alignments provided by SCIS	3.34 (0.99)	3.55 (0.949)	3.61 (0.815)	3.81 (0.884)	0.01 (1,548)
Use alignments provided to SCIS by other school libraries	3.38 (0.968)	3.6 (1.014)	3.62 (0.785)	3.71 (1.019)	0.63 (1,545)
Contribute your own alignments back to SCIS for use by other school libraries	2.73 (0.971)	3.15 (1.02)	3.17 (0.907)	3.32 (0.968)	2.47 (1,542)

5

APPENDIX C – WIDGET SCREENSHOTS

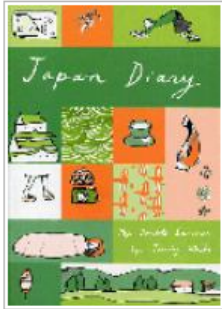|	
SCIS Number:	1199618 Persistent link
ISBN:	1863665943
Title:	Japan diary / by Trudy White.
Other titles:	My double summer. Dragon-boy, hero!
Main author:	White, Trudy.
Contributors:	Curriculum Corporation. Asia Education Foundation.
Publisher:	Carlton South, Vic. : Curriculum Corporation, 2005.
Description:	65, 71 p. : col. ill.
Subjects:	Student exchanges - Fiction. (scisshl) Japanese in Australia - Fiction. (scisshl) Australians in Japan - Fiction. (scisshl) Diary stories. (scisshl) Japan - Social life and customs - Fiction. (scisshl) Australia - Social life and customs - Fiction. (scisshl)
Call nos:	F WHI
Notes:	Stories bound back to back. Funded by the Australian Department of Education, Science and Training through the Asia Education Foundation. Reprinted by Education Services Australia Ltd., formerly Curriculum Corporation. Summary: Amelia Deerson and Taro Nakagawa are exchanging lives for six months and they are taking their diaries with them. This novella in two parts explores the personal journeys and cultural discoveries of two secondary students, one from Australia and one from Japan.
Contents:	Contents: My double summer : Amelia Deerson's Japan diary Dragon boy, hero : Taro Nakagawa's Australia diary.

Figure 9 Curriculum Tagger widget, located below record details on the SCIS test OPAC

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Contents:	Contents: My double summer : Amelia Deerson's Japan diary Dragon boy, hero : Taro Nakagawa's Australia diary.

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Figure 10 Curriculum Tagger widget activated