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Teaching and educational notes

How well do our introductory accounting text books reflect current accounting practice?

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ABSTRACT

A significant body of research has found that accounting education contributes to the narrow and stereotypical scorekeeping perceptions students have of accounting, and that there is a disconnect between accounting education and practice. However, there has only been limited research into why this has occurred. This study examines how the preparer-focused accounting textbooks adopted by New Zealand universities contribute to these concerns. Given that three of the five adopted textbooks are authorised adaptations of American textbooks and one is an American textbook, these findings will have implications for educators and authors beyond New Zealand. In an effort to better reflect accounting practice, this paper calls on authors and publishers of textbooks to acknowledge the wider context within which accounting operates, and the influence of technology on the accounting process as currently practised.

1. Introduction

The Pathways Commission (2012, p. 11) has expressed concern that "students are exposed to technical material in a vocation-focused way that is dis-embodied from the complex real world to which students are bound." This finding suggests that there is a gap between theory and practice in accounting education. It is of even greater concern that this finding is not just a recent phenomenon (Albrecht & Sack, 2000; American Accounting Association, 1986; Arthur Andersen et al., 1989).

The Pathways Commission (2012, p. 86) further found that accountants were still perceived as "scorekeepers, monitors or bean counters." This has in part been blamed on the current teaching resources and the need for new material that "can help students understand the basic bookkeeping elements that serve as a foundation of an accounting education while also conveying the more strategic, dynamic aspects of accounting" (The Pathways Commission, 2012, p. 88). This explanation is consistent with a suggestion that students should be introduced to the broader context of the subject at an early stage (Ferguson, Collison, Power, & Stevenson, 2006), and that failure to do so contributes to the maintenance of the status quo. As higher educational institutions still rely extensively on textbooks as instructional tools (McFall, 2005), one possible explanation for the criticisms outlined lies with the textbook.

The observations above provide the motivation and objective to examine the extent to which the textbooks which have been adopted for the first preparer-focused accounting course offered by New Zealand universities have embraced the changing role of accountants and current accounting practice. As four of the five adopted textbooks are either American textbooks or authorised adaptations of American textbooks, these findings will have implications for educators and authors beyond New Zealand.

This study provides a source of reflection for textbook authors, instructors and subject designers, and contributes to the debate on introductory accounting course design and the integration of technology into the introductory accounting courses. This paper

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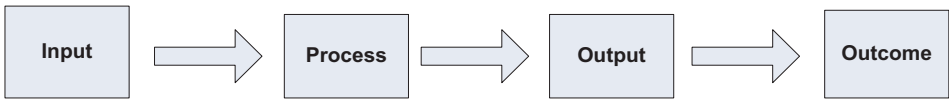

Fig. 1. A system.

commences with an examination of the calls for curriculum reform, then analyses the changing role of accounting and accountants, discusses the relevance of selected texts to current accounting practice and concludes with suggestions for change.

2. Background

The American Accounting Association's (AAA) (1966, p. 1) seminal definition of accounting stated that accounting is "the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information." The definition emphasised that accounting was not merely a process of recording and manipulating economic information, and so did not seek to limit the scope of accounting. Further, it was concluded that accounting should not: be based solely on transaction data; be limited to the measurement of assets and periodic earnings; or be limited to those entities for which periodic earnings were a primary objective. This additional information also does not limit the scope of accounting but instead enables the formation of a more diverse image of accounting which reflects "the breadth of opportunity, challenging and interesting roles and service to society" (The Pathways Commission, 2012, p. 82).

Romney and Steinbart (2012, p. 4) define a system as "a set of two or more interrelated components that interact to achieve a goal." This is illustrated by Fig. 1 where inputs are converted through a series of processes into outputs which contribute to the achievement of specific outcomes. This model provides a useful framework for describing the operation of accounting systems and also offers insights into why the accounting curriculum is perceived by students to be routine and procedural.

As individuals are motivated to allocate cognitive resources based on outcome dependency (Fiske & Neuberg, 1990), instruction in the accounting process should be outcome rather than process-driven. It is argued that this process-driven focus is a major contributor to students' stereotypical scorekeeping-based perceptions of accounting. This is problematic as the positive attributes of stereotypes are underestimated while their negative attributes are overestimated (Park & Judd, 1990).

Accounting historically focused on summarising financial data and then analysing and interpreting the resulting information. However, reporting is no longer economically or technologically constrained by predetermined manual processes. The implications of this shift is reflected in suggested changes to the curriculum by the profession (Price Waterhouse Coopers., 2015) and the academy (AACSB International, 2014).

Concerns that the curriculum fails to reflect current accounting practice are not new. Following multiple reviews of the accounting curriculum in the United States (US) dating back to 1986 (Albrecht & Sack, 2000; American Accounting Association, 1986; Arthur Andersen et al., 1989; The Pathways Commission, 2012) it was concluded that the accounting curriculum and pedagogy created a perception of accounting as a routine, predictable, and procedural activity. This image failed to acknowledge the extended role of accounting from scorekeeping and audit work to include financial planning, assurance services, strategic, risk, knowledge and change management and management advisory services (Parker, 2001). These curriculum concerns led to recommendations from the Accounting Education Change Commission (1992) in the US to liberalise the introductory accounting courses to better reflect the aptitudes and skills needed for an ever expanding range of career opportunities in accounting. One suggestion by Albrecht and Sack (2000) was to integrate information technology into the accounting curriculum at an introductory level. Smith David, Maccracken, and Reckers (2003) claimed that the failure to integrate technology in the introductory accounting textbooks has been an impediment to changing the scorekeeping focus in the introductory accounting courses. These authors further suggested that publishers are conservative and hence unwilling to accommodate change as it would be costly and success could not be guaranteed. An alternative explanation, which may be drawn from these concerns, is that there is an unwillingness on the part of instructors to embrace this change to integrate technology (Watty, McKay, & Ngo, 2016).

Studies undertaken in Australia (Mathews, Brown, & Jackson, 1990) and New Zealand (Marrian & Lothian, 1992) concurred with the US findings that the accounting curriculum and pedagogy created a perception of accounting as a routine, predictable, and procedural activity. Attempts to address these curriculum concerns have mainly focused on the need for, and development of, accounting graduate non-technical skills (De Lange, Jackling, & Gut, 2006; Evans, Burritt, & Guthrie, 2010; Hancock et al., 2009; Jackling & Calero, 2006; Kavanagh & Drennan, 2008). Regrettably, little attention has been given to the technical skills required for the changing role of accountants.

In the US, Sundem (1999) found that pedagogy had changed more than content and that the response to these calls for change remains limited. While Saudagaran (1996) proposed an alternative course design, most programmes have two introductory accounting courses. One is financial accounting, with a focus on scorekeeping, and the other on managerial accounting, with a focus on budgeting and cost behaviour. Both are delivered from a preparer perspective. Such a strategy is unlikely to have a positive impact on non-accounting majors who take these courses. It also creates the illusion that the two sub-disciplines are quite separate and unrelated.

In Australia, Palm and Bisman (2010) found that the first course in accounting which was designed for accounting and non-accounting major students also reflected a procedural bookkeeping and compliance driven bias. These findings are of concern, as negative and inaccurate perceptions may contribute to the recruitment of students who lack the necessary aptitude required by the

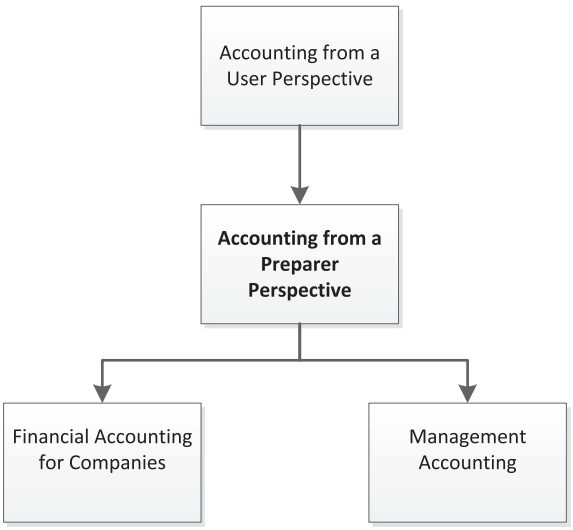

Fig. 2. Typical year one and two course structure.

accounting profession (Palm & Bisman, 2010). A further consequence of these concerns is that students with the skills and capabilities most suited to a career in accounting might make alternative career choice decisions.

In New Zealand, universities responded to the calls for change to the introductory curriculum by replacing their introductory full year course with two shorter half-year courses. The first of these courses focused on an introduction to accounting from a user perspective for all students who are completing a business degree (including accounting majors) but not necessarily majoring in accounting. The subsequent introductory accounting course, on the other hand, adopted a preparer perspective for students seeking to major in accounting. This typical structure for first and second year courses in New Zealand universities is shown in Fig. 2.

Such an approach appears to have been successful in changing the perceptions of business students who studied the first course from a user perspective, as a core component of their business degree. For example, Mladenovic (2000) found that students negative perceptions of accounting were challenged by the inclusion of political, social and historical content in the accounting course. However, it would appear that the concentrated focus on scorekeeping in the second of these courses has done little to change the perceptions of prospective accounting graduates (Malthus & Fowler, 2009; Tan & Laswad, 2006).

In an Australian study, Palm and Bisman (2010) found that there were deficiencies in the prescribed textbooks and supporting supplementary material in the introductory accounting courses. This finding is of concern as Ferguson et al. (2006, p. 243) claim that the textbook is a pervasive instructional device used in accounting education which "has the potential to reinforce cultural homogeneity through the advancement of shared attitudes." Ferguson, Collison, Power, and Stevenson (2010, p. 520) further suggest that "what is selected and omitted from texts was important in terms of framing financial accounting within a narrow and specific context." It is therefore of concern that Hammond, Danko, and Braswell (2015, p. 210) found that the content of textbooks "had not been updated to reflect changes in the profession." Given that critics of accounting education have observed that 'instructors have used textbooks as a crutch, with the more inexperienced teachers simply becoming textbook facilitators' (Herring, 2003, p. 90), these findings have significant implications for accounting education.

3. The changing role of accounting and accountants

The changing role of accounting and accountants has been affected by: the context in which accounting operates; the influence of changing technology on the capture, storage, processing and retrieval of data; and the summarisation of transaction data to produce financial statements and the disaggregation of data to produce information for ad hoc reporting. The context in which an accounting system operates has been subject to considerable change, for the accounting system is now a subset of a much larger information system and most accounting data is now sourced from other sub-systems where the primary focus is on the capture and storage of data about business processes. Accounting is only one piece of the entity "jig-saw" and its shape is largely determined by the influence of the remaining parts. It is therefore of concern to see accounting being taught without reference to any environmental or systems context, particularly as the context will influence the source, capture and reporting of accounting data.

Underpinning the changing role of accounting, technological developments have enabled the production of cost effective information to better facilitate decision making. One perspective for examining the changing role of accounting systems is to review changing sources of accounting data (input), changing data processing mechanisms (processes) and changing organisational information requirements (output). Specific technological developments have included the increasing capacity and declining cost of digital storage media accompanied by the development of database software to facilitate the efficient and effective storage and retrieval of data; the development of computer networks and cloud services that facilitate the capture of data from, and transmission of information to, multiple locations; and the development of the internet to provide a platform to facilitate the transfer of data and

Table 1
Textbooks reviewed.

Code	Authors	Title	Publisher
LDL	Low M., Davey H., Ling A., Sharma, U. & Cheng A.	Accounting Principles and Practice for New Zealand Students, 3rd edition, 2013.	Cengage Learning
CMP	Carlon, S., McAlpine-Mladenovic, R., Palm, Mitrione, L., Kirk, N., & Wong, L.	Financial Accounting: Reporting, Analysis and Decision Making. 5th edition 2016	John Wiley & Sons
WMR	Weygandt, J., Mitrione, L., Rankin, M., Chalmers, K.,Kieso, D.E., & Kimmel, P.D.	Principles of Financial Accounting, 3rd edition, 2013	John Wiley & Sons
HHB	Horngren, C., Harrison, W., Oliver, M.S., Best, P., Fraser, D., Tan, and Willett, R.	Financial Accounting, 7th edition, 2013	Pearson
WKK	Weygandt, J.J., Kimmel, P.D. and Kieso, D.E.	Financial Accounting, IFRS edition 2015	John Wiley & Sons

information between entities. Transaction data is not necessarily captured on paper and is stored electronically in databases. Data is no longer recorded and summarised in specialist journals and reported in summary form in the general ledger, and the general ledger is not now the sole source of data for the production of accounting reports. These developments have contributed to the evolution of modern computerised accounting systems which enable the preparer to aggregate data, disaggregate information, specify user defined time horizons, establish multiple relationships between data items and generate reports on any data item from any perspective (Romney & Steinbart, 2012). This in turn has influenced the structure and operation of accounting systems, and that reality should be central to the introductory preparer-focused accounting course (Albrecht & Sack, 2000).

All transaction data is stored in its original form in a database and transaction details are listed individually in the general ledger. The resulting ledger account is no longer a data store and is now merely a report listing transactions by account. Meanwhile, the posting of data from journals to ledgers, the balancing of ledger accounts and the preparation of a trial balance are no longer prerequisites to the production of the income statement, balance sheet and cash flow statement.

A sound understanding of these developments and their implications is necessary if our students are to comprehend the audit trail which exists within these computerised systems. This changing role of accounting and the influence of technology on accounting practice leads to the following research question:

RQ 1. Have the textbooks adopted for the preparer-focused accounting course offered by New Zealand universities embraced the more context focused and technologically based role of the accountant?

4. Research design

A search of all eight New Zealand (NZ) universities and their bookstore websites in 2016 confirmed that seven universities prescribe the five textbooks listed in Table 1 for their introductory preparer-focused accounting course. The eighth university adopted a hybrid electronic textbook.

The textbook review process involved first, comparing the structures of the selected textbooks to ascertain the extent to which this was consistent with the definition used at the beginning of the textbook in terms of reporting (R) (what) and second, analysing the content to ascertain the extent to which the changing role of accounting in terms of context (C) (why) and the influence of technology (T) (how) reflected the changing role of accounting as discussed in Section 3 and current accounting practice. The definition of accounting was identified and each text was examined to ascertain the business processes described and how the concepts of systems, computerised systems and data sources are explained. This involved searching and locating references to computerised accounting systems, manual accounting systems, non-accounting data, business processes, data sources and other systems. These searches were undertaken manually for all texts except for Weygandt, Kimmel, and Kieso (2015) which was completed electronically using the find function.

5. Findings

The key findings from each of the texts are described. This is followed by a summary analysis.

5.1. Accounting principles and practice for New Zealand Students, 3rd edition, 2013

Low, Davey, Ling, Sharma, and Cheng (2013) (**LDL**) commence by describing the accounting framework and explaining how transactions are analysed according to the accounting equation. In chapter 4, there is discussion on systems for capturing and processing transactions. The authors claim that “these procedures can be said to represent the foundation of any financial accounting reporting system whether manual or computerised” (p. 64). Next, the advantages and disadvantages of computerised accounting systems are summarised but there is no further explanation of how computerised accounting occurs. The final reference to computerised accounting systems occurs in Chapter 6: The Accounting Cycle. This chapter explains that “the steps involved in a computerised system are similar to that used in a manual system. However, some steps in the accounting cycles are done behind the scenes and are not visible to users” (p. 161).

5.2. Financial accounting, 7th edition, 2013

In Horngren et al. (2013) (**HHB**), accounting information systems are introduced in **c**hapter 7 after the accounting process has been fully described. The authors explain that an accounting information system "consists of two basic components: a journal and a ledger" (p. 322). They further explain that "computerised systems have replaced manual systems in most organisations – even small businesses" (p. 324). A section is included on how computerised and manual systems work. The reader is asked to observe the differences between manual and computerised accounting systems as the three stages of data processing - input, processing and output - are described. There is no apparent difference in any of the explanations provided for each step. For example, in chapter 7, the authors state, "In a manual system, processing includes journalising transactions, posting to the accounts and preparing financial statements. A computerised system automates this processing" (p. 324).

It is suggested that "posting in a computerised system can be performed continuously as transactions are being processed… or later for a group or batch of transactions … In either case, posting is automatic" (p. 326). It is further explained that "Computerised accounting systems such as MYOB and ERP systems, are organised by modules, separate but integrated units that are compatible and that function together" (p. 328).

The comparison between manual and computerised processing is described this way: "In modern automated computer systems the special journals are represented by modules" (p. 329). " In these modules the summary listing of all transactions and adjustments is still often referred to by accountants and system documentation as the journal for the relevant area." (p. 329). While it is explained that "Computerised systems are organised by function or task" (p. 326), no attempt is made to explain that the software menus have been structured around the sequence of business processes where each step is linked to the previous one. Instead data capture focuses on cash, credit and returns transactions. For example, "computer accounting systems designers create a special screen for each accounting application (accounting module) – credit sales, cash receipts, credit purchase and cash payments." (p. 342).

In chapter 7, the location of the accounting information system as a sub-system of a much larger information system such as an enterprise resource planning system (ERP) is explained as follows: "larger organisations may invest in enterprise resource planning systems such as SAP, in which the accounting system is a module along with plant management, human resources…" (p. 323). In addition, the difficulties in successfully implementing ERP systems is explained on page 327.

5.3. Principles of financial accounting, 3rd edition, 2013

In Weygandt et al. (2013) (**WMR**), chapter 2 describes the steps in the manual recording process. Ironically, this recording process is illustrated with someone working at a computer implying the manual and computerised processes are the same**.** However it is subsequently explained that "In a computerised system 'journals' are now kept as files, and 'accounts' are recorded in computer databases" (p. 55). No further explanation is provided. Chapter 7: Accounting Information Systems includes a comparison of manual vs computerised systems, and superficial explanations of cloud computing, networks and databases are then provided. It is further explained that "computerised accounting systems are generally organised by task or function, accessed via menus" (p. 277) and that "as in a manual system, transactions are entered into the computerised system from source documents" (p. 278). However, this chapter also suggests that "Large businesses would, in most cases, integrate the accounting software with the overall business computerised storehouse of information, known as a database. Most databases are integrated with other components of the business's management information system; that is, the database includes both accounting and non-accounting data" (p. 277). This section then concludes by questioning the need to teach manual systems, having acknowledged that few such systems exist. The response is that "Most systems begin operations with manual accounting systems and convert to computerised systems…to understand what computerised systems do, you need to understand how manual accounting systems work" (p. 280).

5.4. Financial Accounting, IFRS edition 2015

Weygandt et al. (2015) (**WKK**) commence by claiming that "accounting is the system used to provide useful financial information," thus implying that accounting is a process. Meanwhile, the use of computers in accounting is first acknowledged early on in chapter 2 with the following statement: "While many of our processes are computerized, accounting systems are complex and dictate that some steps must be handled manually by our managers and accountants, and people can make mistakes" (p. 52). The text proceeds to discuss "the manual recording process as we believe students should understand it first before learning and using a computerized system" (p. 59). As with Weygandt et al. (2013), manual recording processes are illustrated with people using computers. While this text acknowledges the existence of computerised systems there is no attempt to explain how these systems might operate and that they might operate differently from manual systems. This text does not have a chapter on accounting information systems, however a footnote in Appendix G states that "A reliable accounting information system is a necessity for any company. Whether companies use pen, pencil, or computers in maintaining accounting records, certain principles and procedures apply" (p. G1).

5.5. Financial accounting: reporting, analysis and decision making. 5th edition 2016

In Carlon et al. (2016) (**CMP**), the concept of an accounting information system is introduced in Chapter 2: The Recording Process (p. 94). This chapter describes the recording and processing of transactions from a manual perspective. The only reference to computerised accounting systems is "In computerised accounting systems such as MYOB or Quickbooks, the computer is programmed

to flag violations of the normal balance and to print out error or exception reports" (p. 103). However, as in Weygandt et al. (2015) and Weygandt et al. (2013), these manual processes are illustrated with people working at computers. Accounting information systems are discussed in further detail in chapter 6. It is explained that an accounting information system consists of "each of the steps in the accounting cycle that you have studied in earlier chapters" (p. 326). It is then acknowledged that systems may be either manual or computerised. Next, as in Weygandt et al. (2013), the need to teach manual systems is questioned given that "the business world uses computerised systems"(p. 326). The response which follows is: "Most systems begin operations with manual accounting systems and convert to computerised systems…" "…to understand what computerised systems do, you need to understand how manual accounting systems work." (p. 327).

The Carlon et al. (2016) textbook is the only one of the five examined which describes the key business processes of the revenue and expenditure cycles (p. 338). Unfortunately, there is no attempt to relate these business processes to the structure and operation of accounting software which is described in the computerised accounting information systems section of the chapter. Instead, "In a computerised accounting system there are programs for performing the steps in the accounting cycle such as journalising, posting and preparing a trial balance and accounting reports (p. 350). It is further stated that "The system of special journals, control accounts and subsidiary ledgers used in a manual system is also evident in computerised accounting systems" (p. 350). This section continues with reference to cloud-based systems and implies that small business software does not collect non-financial information. It does however acknowledge the use of ERP systems which collect and store data in a database and "share information across business processes so that business activities can be co-ordinated" (p. 353). The chapter then concludes with a discussion of the advantages and disadvantages of computerised systems.

5.6. Summary

An analysis of each of the textbooks identified in Table 1 revealed a common structure. The introductory chapters of most of the textbooks commence with an inclusive definition of accounting consistent with the AAA definition, and the next six to eight chapters in each text are devoted to the structure and preparation of the income statement, balance sheet and cash flow statement including the requirements of the financial reporting standards. Approximately one third of the way through each textbook, authors devote a chapter to accounting information systems explaining that the accounting process is the same for manual and computerised systems and this is their rationale for describing manual systems and related processes. The subsequent focus of the chapter discussion is on how to use accounting software rather than analysing its functionality and relationship to key business processes. While reference is made to ERP systems, databases, networks and cloud based systems, these terms are not fully explained, implying that students should have prior knowledge of technology before embarking on this course.

In most instances, the accounting system is represented independently of other systems and it is stated that special journals are used to summarise like transactions. Accounts receivable, accounts payable and inventory systems are described as sub-ledgers of the general ledger and where data passes from the general ledger to sub-ledgers. Little consideration is given to the notion that these "sub-ledgers" exist within the wider information system and that they are in fact the source of data for the general ledger system. All of the textbooks maintain that one of the primary functions of the general ledger is to collect and store transaction data by account code and, with the exception of two textbooks, represent this information in "T" account form.

These findings are summarised in Table 2. Each of the issues identified has been categorized (R, C, or T) according to the changing role of accounting and accountants as described in Section 3.

6. Discussion

6.1. Contextual influences

Any discussion relating to the source and capture of accounting data is incomplete if the context in which an accounting information system operates is not fully understood. Three of the texts acknowledge that the production of financial accounting reports is now a secondary information reporting function and that accounting systems are part of a much larger information system for big

Table 2
Review summary.

		LDL	CMP	WMR	HHB	WKK
C	Explained how the accounting system was a part of a larger information system	N	Y	Y	Y	N
C	Explored alternative sources of accounting data	N	N	N	Y	N
C	Explained the relationship between accounting systems and business processes	N	Y	N	N	N
C	Discussed the scope and depth of information reporting	N	N	N	N	N
C	Provided an inclusive definition of accounting	N	Y	Y	Y	Y
T	Discussed the implications of database technology on data storage and reporting	N	N	N	N	N
R	Described the summarisation of data	Y	Y	Y	Y	Y
R	Discussed the disaggregation of information	N	N	N	N	N
R	Explored the production of ad hoc reports	N	N	N	N	N

C = Context, T = Technology, R = Reporting.

organisations, which affects how, where and when data is captured. However, the explanations are superficial and there is no explanation of the functionality or operation of the larger system or the relationship of the accounting system to the larger system. When texts refer to small business software such as MYOB, Quickbooks or Xero, they fail to acknowledge some of the ERP functionality is now present in small business software, for example processing quotations, and sales and purchase orders. Nor do they acknowledge the hundreds of applications which interface with small business software, or application program interfaces (APIs) which facilitate the exchange of data between software packages to achieve ERP functionality.

While it has been suggested that there are other places in the accounting curriculum to locate these "wider subjects," an opposing argument is that it is difficult to challenge values which have already been socialised in the introductory courses (Ferguson, Collison, Power, & Stevenson, 2007). It is further argued that it is pedagogically unsound to say one thing in an introductory course and something contradictory in a later course. Focusing on the accounting process and failing to consider accounting in context could explain why accounting is perceived to be process driven rather than serving a purpose and being outcome focused. This conclusion is regrettable as any form of outcome dependency alters the perceiver's motivation to attend to individuating information and reduces category-based processing (Fiske & Neuberg, 1990). In other words, an outcome focus would motivate individuals to consider accounting from a more holistic and inclusive perspective.

These concerns have already been shared by the academic community and are partially addressed by Ainsworth and Deines (2011). These authors have addressed the changing role of accounting in terms of the context of accounting by focusing on the capture and reporting of data from a business process perspective. In addition, they integrate financial and management accounting to focus on both external financial reporting and internal reporting to aid management decision making. However, this textbook has done little to address the impact of technology on the accounting process as called for by Albrecht and Sack (2000) and Smith David et al. (2003).

6.2. Technological influences

While there is general consensus that most accounting systems are computerised, it is commonly explained that the manual system must first be understood. Yet no reason is provided for this statement. While it is appropriate to explain the accounting framework before explaining accounting processes, introducing the accounting information system (AIS) after describing the accounting process appears to be illogical. It is argued that the development of a framework with an output and outcome focus should precede any explanation of the process itself. Despite most accounting software being structured around business processes which link transactions through each step in the process, accounting is still described in terms of the traditional manual accounting process involving journals and ledgers. In addition, the texts have failed to articulate clearly the role of technology in the production of accounting information. There needs to be an explanation of how data is processed, captured and related to each step in the business process, providing an opportunity to produce cost-effective accounting information resulting in the availability of a more diverse range of accounting reports. For example, the use of bank feeds with small business software to capture all cash related transactions and match these with stored invoice data, and the exchange of invoice data electronically between organisations, has revolutionised the entire data capture and bank reconciliation process.

6.3. Implications

The process focused approach contributes to an over-representation of the process for preparation of the income statement, balance sheet and cash flow statement, and an under-representation of other accounting information. In addition, the presentation of a fragmented and incomplete view of management accounting marginalises this sub-discipline, and endorses Johnson and Kaplan's (1987) claims that it is subservient to financial accounting, thus contributing to the stereotypical scorekeeping image.

Stereotypes have often been assumed to be overgeneralisations, which implies inaccuracy in the perceived dispersion of group members (Park & Judd, 1990). That is, members are more or less dispersed around the central tendency of the group than is the case. In this instance students are being exposed to accounting processes which do not reflect current accounting practice. The mental stimulus resulting from repeated exposure to the preparation of the income statement and balance sheet encourages students to overgeneralise this experience to represent their understanding of accounting, which in turn contributes to their very narrow perception of accounting. Therefore, if the textbook contained a more contextual and broad-based approach to accounting, there would be greater awareness of the diverse contributions accounting makes to society. In brief, the textbooks have failed to correctly represent contemporary accounting practice or acknowledge the evolving breadth of accounting information produced. These shortcomings limit how accounting is represented in terms of both the scope and purpose, and therefore fail to effectively represent the definition provided at the commencement of the textbook.

Given the superficial treatment of the accounting context and the failure to integrate of technology into the preparer-focused accounting course, it is clear that the compulsory introductory information systems course which exists in most undergraduate programmes should be a pre-requisite for this course. This suggested structure is illustrated in Fig. 3.

Completion of a pre-requisite course would enable students to comprehend how accounting systems operate within a larger information systems context, thus reinforcing the purpose of accounting. Reluctance to implement this suggestion might suggest that authors and instructors alike are unaware of how technology has influenced accounting practice and how the AIS has become part of a larger organizational information system.

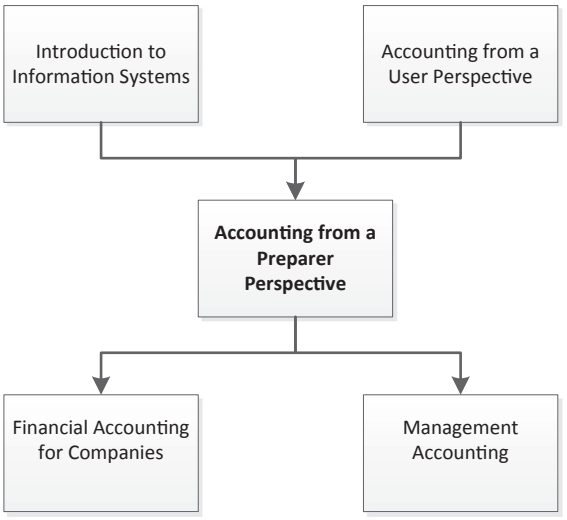

Fig. 3. Suggested year one and two course structure.

7. Conclusion

Fifty years have elapsed since the AAA (1966) called for a broader and more inclusive definition of accounting. Although most introductory textbooks have adopted variations of this definition, few if any appear to have embraced the inclusiveness of this definition, resulting in a failure to reflect accurately the depth and breadth of current accounting practice. This review found that the continued scorekeeping focus in the textbooks adopted by NZ universities does not inform future accountants of the diverse roles performed by accountants. This finding may lead to the recruitment of students who lack the required skills and capabilities to contribute successfully to the accounting profession. This may discourage the brightest and best students from selecting an accounting major. Given that four of the five textbooks adopted are either adaptations of US textbooks or published in the US, these findings will have implications beyond New Zealand.

Consistent with the recommendations of The Pathways Commission (2012), this teaching note issues two calls to authors and publishers. The first, to clearly articulate the context in which accounting operates by explaining the relationship of the accounting system to a much larger information system. To do so it is necessary to explain how most accounting data is sourced from business processes within the wider information system. The second, to better reflect the influence of technology on accounting as currently practised, providing students with a better understanding of how accounting data is captured, stored and retrieved. These strategies would highlight the problem solving role and de-emphasize the scorekeeping image of accounting, helping ensure the recruitment of students with the appropriate skills and capabilities for a career in accounting.

The findings from this study suggest that the approach taken by the authors of introductory accounting textbooks contributes in part to the inaccurate perceptions that students form of accounting. The extent to which the influence on the textbook is instructor-publisher- or author-driven is unclear. However, the consistency of approach among the textbooks would suggest an element of influence by the authors and their publishers. In an effort to further understand the influence of the instructor on textbook content, these findings provide a further research opportunity to investigate why instructors selected these textbooks.

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