Cypriot Journal of Educational Sciences

Volume 18, Issue 1, (2023) 354-369

www.cjes.eu

Creativity in cost and management accounting education: A literature review

Cengiz Yilmaz *, Afyon Kocatepe University, Gazlıgol cd, ANS campus, Afyon 03200, Turkey

Suggested Citation:

Yilmaz, C. (2023). Creativity in cost and management accounting education: A literature review. *Cypriot Journal of Educational Science*. *18*(1), 354-369. https://doi.org/10.18844/cjes.v18i1.8348

Received from September 13, 2022; revised from November 12, 2022; accepted from January 21, 2023.

Abstract

Humankind's creativity contributed to and improved music, arts, and scientific developments. Humankind's knowledge, experience, and life quality can be increased with creativity. Creativity increases the opportunities in accounting besides the other occupations in every aspect. Creativity is (and should be) at the center of the educational system for sustainable development. Human beings have traded and produced since ancient times. Trade transactions must be collected, classified, recorded, controlled, and summarized i.e. accounting. Therefore, accounting has become a necessity rather than a fancy choice. Today, even small companies make hundreds and thousands of daily transactions, which requires employing many accountants and consumption for accounting. Accounting activities require processing millions of transactions which require better accounting capabilities and creativity. The success of economic life, financial market, governmental organization, and companies relies on accounting information's correctness, reliability, and relevance. Processing, analyzing, preparing, and using information for decisions related to the future can be called cost and management accounting. Nevertheless, processing costs and management accounting information are complex, and the certainty and predictability are less. The necessity of creativity in accounting education, accounting process, making decisions, and control became prominent. Accounting students and graduates work in a highly complex environment where they have to benefit from science, technology, improvement, and creativity. Accounting processes are required: the ability to collect correct and relevant information (documents), classify these documents, record them, analyze them, make decisions and send feedback, which requires an additional high degree of creativity. Future accountants, business people, and teachers must be more creative and use more creative teaching methods. Today and in the future, accountants and accounting teachers have to be able to improve and adapt more creative teaching methods. So accounting teachers must focus on improving innovative (be creative) teaching methods: examining the teaching methods, philosophes content, and the whole teaching process. Reviewing the literature might lead several accounting bodies to develop and improve more creative accounting teaching methods.

Keywords: Creativity, Teaching, Accounting Education, Teaching Methods, Incentives of Accounting Education.

* ADDRESS FOR CORRESPONDENCE: Cengiz Yilmaz, Afyon Kocatepe University, Gazlıgol cd, ANS campus, egitim 3, Afyon 03200, Turkiye.
E-mail address: ylmzcc@yahoo.com / Tel.: +90 505 6625019

1. Introduction

Accounting can be seen as a dull and irritating profession for most people. Most of the students today. When the accounting profession is mentioned, new generation is afraid to enter the profession and avoid being an accountant. Because accountancy is a profession that requires years of patience. After years of work and nothing can be achieved. Drinking plenty of tea and coffee (even smoking, which is quite harmful) in closed rooms and under dim lights is some of the characteristic examples of accounting. Accountants collect and analyse almost all the information necessary for decision-making and present it to interested parties. Afterward, decision makers take the leading role and make decisions based on accounting data. Decisions made based on accounting data are rational decisions because the reason data reveals rational ratios and information based on numbers. The decisions' health directly depends on the accuracy and health of the accounting information, especially the cost and management accounting information. Because accounting is the `language of business (Yilmaz, C, & others 2009) which provides correct and reliable information to the decision-makers, any kind of misinformation or incorrect language use might result in disaster failures and bankruptcies. Cohen & Holder-Webb (2006) claims, "Accounting provides the juncture between economics and management."

False accounting information business language will result in failure and bankruptcies. In the past, the role of accounting consisted of only the complete recording of documents related to business transactions. Today, it has changed: focus on future and managerial decisions.

Technological developments make it necessary to collect accounting information of enterprises from the smallest to the largest and use it for their strategic purposes. Today, even small businesses use technology to measure and analyse labour, raw materials, indirect costs, unit costs, total costs, quality of the produced product, etc. for strategic decision-making processes. Technology has made it possible or made it compulsory rather than a choice. Mudallal, Z (2015) suggested that since technological developments, technology-driven creative companies like Airbnb could be able to grow up so fast. Developments in social media and the Internet made it possible, so entrepreneurs to become more and more creative.

Technological change and globalization, trade liberalization, and liberalization have also increased today's competition. Today, top companies have to compete directly with thousands of companies, regardless of their size and geographic distribution. In this case, every manager accountant has to collect and use new adequate management accounting information. In addition, green accounting studies also require measurements related to emission volume, determination of limits, monitoring and control of performance, and audits of monetary calculations, increasing the usual burden of accounting. Accounting is recording events commercially and, more often, determining criteria that will affect the green economy when necessary.

Entrepreneurial activities have increased rapidly with the freeing of the economy and globalization. Today, the number of accountants who help and support them has increased significantly. Financial globalization has triggered financial development, increased the number of banks, and employed bankers locally and globally. Naturally, demand for accounting labor and financial affairs increased. Today, the number of qualified (cost and management) accountants employed by the financial sector is much higher than in the past.

2. Changing Role of Management Accounting

Hopwood, A. G. (1972) indicated and explained the role of accounting data in performance evaluation. Marquardt & Zur (2015) examined the role of accounting quality and found that “(1) the likelihood that

the deal will be structured as a negotiation rather than as an auction, (2) the speed with which the deal reaches final resolution, and (3) the likelihood that the proposed deal is ultimately completed." Watts & Zimmerman (1986) claim that accounting formation, such as details of debt and receivables, important dates, and some of the accounting ratios should be specified in the financial contracts. Ball (2001) suggests that standardizing these financial contracts, and their disclosures would be cheaper. Radical changes, extreme instabilities, revolutions, or crises might change the nature of the systems and the roles. Bhimani (2008) suggests a crisis may have changed the rules and role of accounting; the accounting role became a global risk mitigating role which has to gain political and institutional legitimacy first is related to perceived market imperatives.

Today, most European company countries have started to use international accounting standards instead of domestic ones. So, accountants' roles became more international than local such as in Germany, France, and Italy. Many other countries are trying to adopt international accounting standards. Lovell & MacKenzie (2011) claimed that accounting plays a professional role in governing climate change. Wilmshurst & Frost (2001) indicated that accounting and accountants plays a crucial role in environmental management. Akimova & others (2019) claims that accounting plays a role in sustainable development and national safety. Abernethy & Brownell (1997) claimed that accounting can and plays a role in controlling behaviors and personnel.

3. Creativity in Education

When we look at the history of humanity, there are times high creativity changed history; ages. The discovery of the lifting power of water. The discovery of zero. The discovery of the wheel. The discovery of mobile phones has all supported the development of humanity. During these creative times, people's welfare levels have increased and their lives have become easier. Discoveries happen as a result of creativity, research, and curiosity. Creativities and discoveries make life easier for humanity and increase its well-being.

Not every discovery and creativity work on behalf of humanity, for instance, the discovery or creation of dynamite. However, we can say that creativity, including the bad use of creativity, increases human well-being and makes life easier.

Craft (2003) listed the Limits of Creativity in Education under four headings: "the limitations of the terminology; conflicts in policy and practice; Limitations stemming from centrally-controlled pedagogy." Besides, in the same Writing: Social limits, Environmental limits, Ethical limits, and finally, limits since the failure to connect ordinary and extraordinary creativity are investigated.

Spendlove (2008) has identified a typical list of characteristics of a 'creative' person as: "

"• intellectual curiosity;

• deep commitment;

• courage to be different;

• independence in thought and action;

• strong desire for self-realisation;

• strong sense of self;

• strong self-confidence;

• openness to impressions from within and without;

- attracted by complexity and obscurity;
- high capacity for emotional involvement in their investigations;
- intrinsically motivated."

Sternberg (2003) Listed the tests that can be used for Measures of Successful Intelligence as Analytical–verbal, Analytical–quantitative, Analytical–figural, Practical–verbal, and Practical–quantitative. Practical–figural: Route planning, Creative–verbal, Creative–quantitative, Creative–figural. In the same Writing, possible forms of teaching for creativity are listed as: redefining problems, analyzing ideas, selling ideas, knowledge is a double-edged sword, surmounting obstacles, taking sensible risks, willing to grow, believing in yourself, Tolerance of ambiguity, finding what you love to do and do it, allowing time, Allowing mistakes.

Today, one of the most popular topics is the knowledge economy. Because today, new goods and services created by the information and the use of correct information are the most critical competitive advantage. Companies and nations are trying to maximize their competitiveness via creativity. Companies and countries with high competitiveness can improve their financial situation and increase their level of prosperity. In this context, creative training methods have become the primary element of creative companies, countries, and, most importantly, education systems. The way to increase well-being has become to train and develop creative people and employees through creative education systems. Besides, Thum & Zifkin(2006) and Eckhoff & Urbach (2008) claim that students' creativity is directly related to Academic Success. At the same time, Horng & others (2005) found that: creative teaching is influenced by personality traits, family factors, self-steaming, beliefs in teaching, and better educational management.

4. Difficulties in Creative Education

Good, advantageous, and positive things; creativity cannot be so easy and cheap: too good to be true. Creativity in (cost and managerial) accounting is not so cheap. Creativity requires burdening high monetary costs. The cost of better organizations, the cost of physical places, the cost of labor, and the cost of education (from primary to post-grad studies) are all expensive. In terms of time from primary to post-grad studies, a person has to spend a long time. Furthermore, lack of teachers' training in creativity (Fleith, 2000), lack of willingness of teachers (extra burden) Beghetto (2007), and physical limitations (bureaucracy, class sizes, number of students) (Kim, 2008) are some of the difficulties creative education faces. Besides, Beghetto (2006) and Freund & Holling (2008) implied that teachers value creative actions, but they do not encourage students' value to creation activities since they are too risky; they love but do not the burdens of creativity.

5. Creative Teaching Strategies

Kim (2008) & Fleith (2000) claimed that a lack of teachers' training in creativity is a barrier to creative teaching. The solution is teachers' training about how the lectures can be improved more creatively. Kim (2008) also suggests that better physical conditions might contribute to creative teaching.

As seen in Table-1, other alternative strategies can be used in creative strategies.

TABLE 1. Creative Teaching Strategies

Desired Result	Strategy	Research
More engaged students	Make connections between content material and real life	Horng, Hong, ChanLin, Chang, and Chu (2005)
Appropriate use of creativity in the classroom	Distinguish between different types of creativity	Beghetto (2007)
More original student products	Simply include the words "be creative" when giving directions	Niu and Liu (2009)
Student creativity that is general and transferrable to other domains	Give students explicit directions to be creative by describing specific examples of ways to be creative	Cheng et al. (2006)
More authentic creative learning opportunities	Evaluate the actual level of creativity associated with activities by measuring the amount of original student input	Walling (2009)

Source: Rinkevich (2011).

The National Advisory Committee on Creative and Cultural Education (NACCCE) responded to the 1999 U.K. Government White Paper (NACCCE 1999), which defined crazy creativity as "producing something original. "It also claims that there are different views about creativity. These are Sectoral Definition; creativity primarily involves the arts, industries, sciences, mathematics, technology, politics, and business. Elite Definition; only scarce people are creative and have unusual talents. Democratic definition; a democratic society should provide equal opportunities for everyone concerning their relevant knowledge and skills. In a democratic society, people can be more creative. The Social (cultural) definition; is mainly related to anthropology and sociology. Different national, local, ethnic, religious, ideological, and professional groups' interests and values may differ, and their degree of creative capabilities might differ according to this difference. Cultural diversity may increase the chance of social creativity. According to the Committee, there are four characteristics of creativity these are: (1) thinking or behaving imaginatively, (2) activity is purposeful, (3) generating something original (4) outcome must be of value.

White Paper Excellence in Schools (1997) indicated that education is a vital investment in human capital in the twenty-first century. In the same Writing, five points were prioritized: overcoming economic and social disadvantages, creating greater fairness, encouraging aspiration and competitiveness, and revealing the potential of every individual.

6. Need for Creativity in Cost and Managerial Accounting

It is believed that there are two main reasons for the need for creativity in Cost and Managerial Accounting: (1) the gap between teaching and real life. (2) Rapid technological changes require the teaching of more dynamic and creative cost and management accounting methods. (3) Cost accountants must have more core competencies: analytic capabilities, analyzing capabilities, computer-based capabilities, etc.

There is a gap between teaching and real life: this requires improvement and creativity in accounting education. The gap between the Real-life conditions and static teaching subject is also a matter between the employers of accounting candidates and accounting teachers.

Accounting professionals usually complain about the inadequacies of accounting graduates. They complained about the need for re-training the students according to real-life requirements, which requires improvement and creativity in accounting education. Training courses' subjects and the rules and requirements imposed by the government and management are usually very different.

Rapid technological changes require teaching more dynamic and creative cost and management accounting methods. In the continuously technologically developing world, almost all trade (and managerial) activities are affected by technological developments. Today, decision-makers have to make their decisions faster and more accurately. Besides, market conditions change very fast. In this situation, using static methods within the dynamic environment is inappropriate. A dynamic environment requires to use of more dynamic and creative methods. Creative Dynamic Cost Simulations and what-if analyses can be more appropriate methods. Today there is a strong need for teaching more creative computer-based decision-making simulations which represent and simulate real business life.

Cost accountants must have more core competencies for their organizations and themselves. Teaching better cost and managerial capabilities would improve the organization's profitably

7. Creativity in Accounting Education

Eberly & others (2001) claim that “experience knowledge as static rather than dynamic." Indeed, the majority of the students and the lecturers support this. Because; of the lack of financial sources, managers' and lecturers' (Workload) choices, students' unwillingness, etc., the content and syllables of the accounting course may not change for a long time. This can make the subject boring too. Besides the intelligence and interest levels of the students are different, the teaching methods and approaches have to be different as well. Innovating different ways of teaching requires creativity in teaching.

In smaller organizations, all personal education creativity can be considered a single critical sign of personal activity. However, in more prominent companies, small, medium, and multinational companies' big companies, creativity in designing or improving products and services meats organizations need organizational activities planning man budgeting in big companies. Let us see creativity creating a rocket with supposed to go to Mars cannot be actualized and realized by only personal creativity. In this case, huge organizations like NASA and airplane companies like McDonald's Douglas, and Boeing must organize scientific creativity actions. This scientific organization's huge scientific organizations should be organized, and during this organization, accounting has to be used for planning, budgeting, execution controlling, and feedback.

Yilmaz & others (2009) described accounting as the "language of business." Because business people and organizations communicate with accounting information systems between departments, investors, decision-makers, and workers. They make decisions relying on accounting information: communication. So, the efficiency of business language: "accounting," directly affects the company's success. In accounting, giving correct, reliable, and appropriate information (better communication accounting) to the related parties are basic.

According to White Paper Excellence in Schools (1997), education (consequently creativity) is one of the vital investments in human capital, which creates greater fairness, encouragement of aspiration, reveals the potential of every individual, and, finally, competitiveness.

Companies have to communicate by using the language of business in every stage of the organization to be more creative and consequently more competitive. Using accounting information systems in creative organizations is a necessity rather than a luxury. Because these organizations need to plan creative and scientific activities, they must budget how much they may cost. They have to realize the planning is afterward they have to assess tired dear efficiencies how did them control them and finally they have to prepare reports of the creative scientific activities in a big business this is a necessity. According to her creativity produced by individuals or teams, Amabile (1997) studied organizational

creativity and innovation. Strong content, well-designed instructors, and better evolution are critical factors in designing accounting problem education programs.

Lavoie & Rosman (2007) give information about the Resource-Enriched Learning Model (RELM), which consist of four steps:

"1. The ID specialist introduces faculty to some educational theory as a context for understanding the need for a change in orientation from lecturer to facilitator… 2. Faculty then choose and often create activities (e.g., assignments, quizzes, etc.)… 3. Faculty identify service points (e.g., librarian, content experts at firms) and specific resources (e.g., readings and media... 4. … organize the course in the temporal outline usually provided in a course syllabus ...". Writer claim that the success of (RELM) rely on integration of independent instructor and student portfolios.

Cohen & Holder-Webb (2006) claims the business press criticizes academics for teaching irrelevant skills. Unfortunately, there are some claims in real life business as well small and medium-sized entrepreneurs criticize accountants they want everything and all kinds of paper, they take our time money, etc., but they do not give necessary information such as 'the unit costs of product' and 'performance evaluations, etc. Real-time, real-life related information is not provided.

Lux (2000) claims that today's accounting profession is forcing educators to reconsider their teaching methods and liabilities: the nature of accounting teaching.

In this perspective, "accounting students' critical thinking, communication skills, and computer literacy skills" should be improved (Murphy & Hoeppner, 2002). Jackson & Durkee (2008) emphasize the importance of implementing information literacy into the accounting curriculum.

8. Cost and Management Accounting as Core Competency

The information used in business life is gathered or generated by accounting, especially management accounting. Business people have to use many cost and management accounting information to communicate. Members of an organization can send and receive information about the requested raw materials, labor, overhead costs, production price, etc. To inform the other members, they must use a language called "language of business" (Yilmaz and others, 2009).

Collecting documents, classifying them, recording them, controlling and reporting them requires experience, skills, and knowledge. Quality and efficient usage of the information gathered and generated by experience, skill, and knowledge is much different from the unqualified ones. Cost and management information can create competitive advantages called core competencies. Cost and management information is used in planning, budgeting, execution, and feedback, which are better management functions. Better management directly affects the success of the company. Providing correct, reliable, and appropriate managerial information for decision-making (cost and management accounting) is a core competency that directly affects the company's success. Better planning, budgeting, executing, controlling, and feedback via efficient management accounting can generate a crucial competitive advantage called core competency. Core competencies are the skills and capabilities that help companies generate extra profit, increase market share, and increase their competitiveness, which cannot be easily and cheaply imitated.

Today's business life and social life are changing quite fast. People have to respond and adapt to these changes. In this fast-changing environment, people have to keep up with changes in technology and business requirements by learning new skills and by improving their skills and their core competencies. Accountants, specifically cost and management accounts, also keep up with changes and improve their skills and core competencies; for instance, they must improve their analytical and computer skills.

Traditionally, accounting skills and core competencies are gained mainly during accounting courses and internships. So, there is a strong need for reengineering the curricula.

Bedford et al. (1986) claimed that there is a need for significant reorientation: improvements in accounting; scope, nature, and practice content should be improved in taxation, budget preparation, internal controls, and strategic management, indeed, which requires creativity in accounting courses.

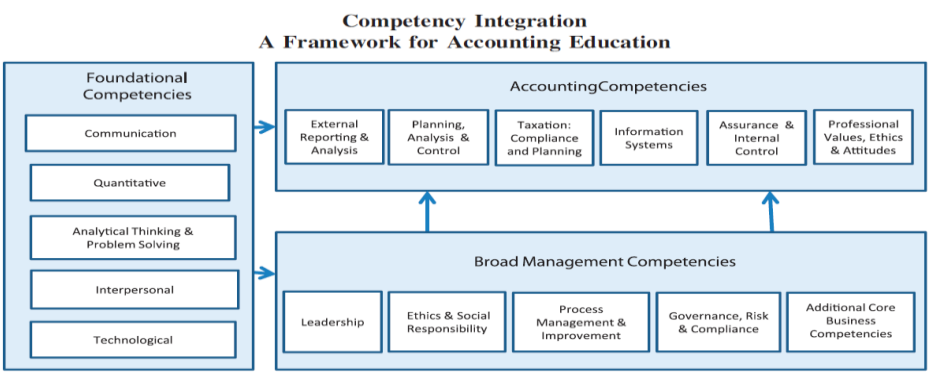
The principal accounting firms, then the "Big Eight," described the skills and knowledge required for the accounting profession as: Skills for Public Accounting: (1) Communication skills, (2) Intellectual skills, and (3) Interpersonal skills and Knowledge for Public Accounting: (1) General knowledge, (2) Organizational and business knowledge and (3) Accounting and auditing knowledge (Perspectives on Education “White Paper.” 1989)

Accounting Education Change Committee (AECC) claimed that accounting educators should focus on: Businesses' organizational knowledge; accounting systems have to provide information representing the whole situation. Unstructured problems: because accounting problems are mostly unstructured, teaching rather than memorizing, increasing candidates' analytical and analyzing capabilities is crucial. The other point to be mentioned is increasing emphasis on integrating active learning into the pedagogy and technology throughout the accounting curriculum (Williams, 1993). Siegel & Sorensen (1994) also argued about the gap between the requirements of the real sector and the subjects taught in accounting courses. Albrecht & Sack (2000) stated that attraction to accounting and enrolments was down, and accounting academicians were unhappy. According to the Pathways Commission Report (2013), accountants must have professional judgment skills and skepticism. It is believed that accounting competencies have to go along with management competencies in harmony. Lawson et al. (2014) figured out the accounting education framework (figure-2).

Siegel, Sorensen, Klammer, & Richtermeyer (2010a). Claimed that 80 percent of accounting students work in other areas rather than accounting and have called for action. In the same year, Siegel, Sorensen, Klammer, & Richtermeyer (2010b) proposed a guide for change.

In terms of core competencies, three parties can be classified as potential accountants, students, information users, and management. They are the beneficiaries of core competencies. This is why their perspectives may differ, and further studies may compare students', lecturers', and users' perspectives. Indeed, Usoff & Feldmann (1998) investigated Accounting Students' Perceptions of skills: core competencies. Results of this study represented that the highest rated technical skills were accounting knowledge and professionalism. Nontechnical skills were: leadership, oral communication, written communication, and working with others.

Figure-2 A Framework for Accounting Education



Source: (Lawson et al., 2014)

According to Beard (2007), AICPA Core Competencies are "Functional Competencies; Decision modeling, Risk analysis, Measurement Reporting Research Leverage technology to develop and enhance functional competencies, Personal Competencies; Professional demeanor, Problem-solving, and decision-making, Interaction, Communication, Project management, Leverage technology to develop and enhance personal competencies, Broad Business Perspective Competencies; Strategic/critical thinking, Industry/sector analysis, Legal/regulatory perspective, Leverage technology to develop and enhance broad business perspective.

According to AICPA (2006), technology-related core competencies and abilities accountants have to have listed as follows: Ability to access appropriate electronic databases, to assess the risk of technology, assess and control risk, to build appropriate models and simulations, to Exchange information, to Recognize commonly used information architectures, to Recognize business opportunities and risks, to mine data, to uses technology to develop a strategy.

9. Creative Methods and Strategies for Teaching Cost-Management Accounting

Traditionally teaching is led by the teacher and focused on acquiring given knowledge. Passive learning is the leading case because Students are thought to be homogeneous. Assignments' role is more in teaching. In Traditional teaching, there should be a high degree of discipline and order to teach a massive amount of information in a short time to every student, almost at the same level, as in Lean production. However, the reality is that there is no standard students all are at the same level of knowledge, their needs and capacities are different, and their way of understanding problems and choices for solutions are different. Dunn & Dunn (1979) claims that some students are more visually oriented despite the fact that others are more text or sound-oriented. There is a need to use and improve creative teaching methods, especially in cost-management accounting. Some of the creative methods discussed below:

Brainstorming: asking open-ended questions to the class like "how to realize cost-cutting activities in labor costs, raw material costs, and overhead costs." Opening discussions about the comparison of decrepitation methods, stock valuation methods, and their results over the costs and the net profit, may improve understanding and the cost accounting environment and provide many different solutions, even the creative ones. Kennedy & Dull (2008) claimed that accounting students' skills could be transferable with methods like brainstorming.

Reverse Brainstorming: asking and discussing the problems and discussions from the reverse "the other perspective" or "negative questions." Instead of asking what you should do, you may ask what you should not do. Students have to have ideas about what they should and should not do—increasing the ability to analyze different perspectives of the decisions. For instance, you can ask how to increase costs (negative) instead of asking questions about reducing costs (positive). Therefore, students can think and see both prosses and cons of accounting.

The hot-seat intervention is defined by Bentley, Brewer & Eaton (2009) as a six-step process: these are: (1) creating a grading scheme, (2) designing the syllabus, (3) creating lesson plans, (4) executing the hot-seat method during class (5) scoring the hot-seat performance (6) incorporating earned bonus points to course grades. This article explained how it was successfully used by one professor in Principles of Managerial Accounting.

Mapping: in the financial accounting theory course investigated by Simon (2007), who claimed that mapping is helpful for learning.

Betterment and improvement strategies in cost and management accounting: suggest there should be continuous betterment and improvement activities in cost and management education. For this reason, Yilmaz (2015) applied FMEA (Failure Modes and Effects Analysis Technique) to identify management courses' failures. The study's primary failure was the students' lack of analytic capabilities. For betterment mathematical capabilities and skills of the students are enhanced. The result was entirely satisfactory. Yilmaz's (2015) study suggested that there should be continuous control of the educational factors, which can vary according to the student groups' time, place, and nature. After identifying problematic factors, they should be improved.

Using actual ledgers and accounting books in assignments: gave outstanding results in Afyon Kocatepe University. They were setting up new company Assignments given to the students. Most students are fascinated with the assignment as if they were setting up a new company. They pay more attention and care to the core, increasing their grades. Indeed, there is a strong need for empirical studies on the results. Similarly, Barsky, Catanach, & Lafond (2008) and bookstore managers developed a Balanced Scorecard, and students used a balanced scorecard during the course. The result was positive.

Usage of technology: Apostolou, Blue, & Daigle (2009) investigated the usage of computers in tests in introductory managerial accounting, but their results were not favorable. Furthermore, Calk, Alt, Mills, & Oliver (2007) investigated streaming video course lectures, and again interestingly, there were no statistical differences. Besides, Love & Fry (2006) inspected the virtual learning environment (VLE); however, the results were not as expected again.

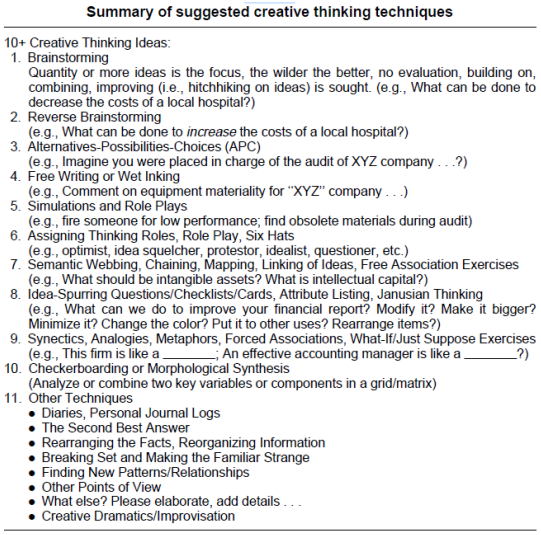
Free Writing: this would be a creative way of teaching cost and managerial accounting. A new company's possible costs, working capital, and managerial strategies can be asked to the students so they can represent their entrepreneurial and cost and management accounting capabilities more creatively.

Role Plays or Simulations: students can work with (almost) real numbers, environments, and variables. Role-playing may increase the alternative way of thinking during the class from different stakeholders' perspectives. Students can analyze and try to understand buyers', sellers,' workers,' owners,' and governments' positions. For instance, while a firm owner would try to reduce the tax amount taxman, the government would try to reduce the costs, and management accounting tries to decrease them. Their way of working with the cost and management accounting information, analysis, and actions can (will) be different. Above and beyond, Bonk (1987) claimed that Computer simulations improve student risk-taking and assessment capabilities.

Semantic Webbing is chaining, linking, or webbing ideas, positions, posts, and logical relations. Visualization of the information or logical relation gives clear and easy understanding to the students.

Indeed, there are some more methods of them mentioned below (figure-3):

Figure-3: Suggested Creative Thinking Techniques.



Summary of suggested creative thinking techniques

10+ Creative Thinking Ideas:

1. Brainstorming
   Quantity or more ideas is the focus, the wilder the better, no evaluation, building on, combining, improving (i.e., hitchhiking on ideas) is sought. (e.g., What can be done to decrease the costs of a local hospital?)
2. Reverse Brainstorming
   (e.g., What can be done to *increase* the costs of a local hospital?)
3. Alternatives-Possibilities-Choices (APC)
   (e.g., Imagine you were placed in charge of the audit of XYZ company . . .?)
4. Free Writing or Wet Inking
   (e.g., Comment on equipment materiality for "XYZ" company . . .)
5. Simulations and Role Plays
   (e.g., fire someone for low performance; find obsolete materials during audit)
6. Assigning Thinking Roles, Role Play, Six Hats
   (e.g., optimist, idea squelcher, protestor, idealist, questioner, etc.)
7. Semantic Webbing, Chaining, Mapping, Linking of Ideas, Free Association Exercises
   (e.g., What should be intangible assets? What is intellectual capital?)
8. Idea-Spurring Questions/Checklists/Cards, Attribute Listing, Janusian Thinking
   (e.g., What can we do to improve your financial report? Modify it? Make it bigger? Minimize it? Change the color? Put it to other uses? Rearrange items?)
9. Synectics, Analogies, Metaphors, Forced Associations, What-If/Just Suppose Exercises
   (e.g., This firm is like a _____; An effective accounting manager is like a _____?)
10. Checkerboarding or Morphological Synthesis
    (Analyze or combine two key variables or components in a grid/matrix)
11. Other Techniques
    - Diaries, Personal Journal Logs
    - The Second Best Answer
    - Rearranging the Facts, Reorganizing Information
    - Breaking Set and Making the Familiar Strange
    - Finding New Patterns/Relationships
    - Other Points of View
    - What else? Please elaborate, add details . . .
    - Creative Dramatics/Improvisation

(Source: Bonk & Smith 1998)

10. Conclusion

Creativity is mainly related to arts, cultural activities, and science. Indeed, there is a need for creativity in the business. Setting up a new business and running an existing one requires considerable managerial creativity. Developing products, production methods, and marketing activities require even more creativity. Management accounting is managing the business with accounting information. Valuable, competitive, and core competence provider managerial accounting information is the correct, reliable, and appropriate information for decisions making.

Unfortunately, the popularity of cost and management accounting is getting less maybe because of more extended class and work times, small class sizes, boring subjects, need for long & high degree of concentration, repeating the same thing repeatedly. Investing in cost and management accounting and its technology requires a substantial financial and human capital investment with an unknown rate of return. Investing in (accounting) education requires money, human capital, energy, and time. Nevertheless, the return on educational investment is unknown. However, there is a return. Yilmaz & Demirhan (2016) found that an increase in tertiary education enrolment rate increases the real GDP per capita. Education, especially creativity education, can contribute to economic growth.

Identifying successful creative uses of cost and management accounting teaching for improving their capabilities is the main target of the accounting lecturers. So, researchers must expand the context of teaching. This requires creativity in education.

Cost and management accounting subjects, rules, and regulations are continuously changing. There is a need for orientation and adaption to changing conditions. Developing and improving critical and creative thinking techniques can significantly contribute to the business environment. Yilmaz & Demirhan (2021) found a bi-directional relationship between financial development and economic growth in the short run. Subsequently, creative accounting education and its result: financial development can directly contribute to economic development. Better and creative cost and management accounting lecturing would increase the quality of financial development, resulting in economic growth.

Developing students' accounting skills with creative methods: effectively using spreadsheets, databases, and integrated accounting software can represent progress.

The literature review can be helpful in tracking, learning, requesting, screening, and selecting creative lecturing methods. Implementing and comparing creative methods measuring their contributions to students can be significant progress. Improving the capabilities of students means improving human capital. Lecturers, schools, and universities must intensify their efforts to increase creativity in education, especially in cost and management accounting. Existing and similar studies can contribute to these efforts.

Acknowledgements

Author Contributions

The author contributed to this article as follows: the idea of study conceived, literature reviewed, analysed, concluded, critical revised, and manuscript written by the author.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding

The study was not supported by any organisation.

References

Abernethy, M. A., & Brownell, P. (1997). Management control systems in research and development organizations: The role of accounting, behavior and personnel controls. Accounting, Organizations and Society, 22(3-4), 233-248.

Accounting Education Change Commission. (1990). AECC Urges Priority for Teaching in Higher Education. Issues in Accounting Education. Vol. 6 Issue 2, 330-331.

AICPA, "AICPA Core Competency Framework for Entry into the Accounting Profession (The Framework)," http://www.aicpa.org/edu/corecomp.htm.

Akimova, L. M., Levytska, S. O., Pavlov, K. V., Kupchak, V. R., & Karpa, M. I. (2019). The role of accounting in providing sustainable development and national safety of Ukraine. Financial and credit activity problems of theory and practice, 3(30), 54-61.

Albrecht, W. S., Clark, D. C., Smith, J. M., Stocks, K. D., & Woodfield, L. W. (1994). An accounting curriculum for the next century. Issues in Accounting Education, 9(2), 401.

Albrecht, W. S., R. J. Sack. (2000). Accounting Education: Charting the Course through a Perilous Future. American Accounting Association, Accounting Education Series, Vol. 16.

Amabile, T. M. (1997). Motivating creativity in organizations: on doing what you love and loving what you do. California management review, 40(1), 39-58.

American Accounting Association Committee on the Future Structure, Content, and Scope of Accounting Education. (Bedford, N. M., E. E. Bartholomew, C. A. Bowsher, A. L. Brown, S. Davidson, C.T. Horngren, H. C. Kurtz, M. M. Piser, W. G. Shenker, J. K. Simmons, E. L. Summers, J. T. Wheeler.)

1986. Future Accounting Education: Preparing for the Expanding Profession. Issues in Accounting Education. August, 168-195.

Ball, R. (2001). 'Infrastructure requirements in the area of accounting and disclosure policy' In Brookings-Wharton Papers on Financial Services, eds. R. Litan and R. Herring. Washington: Brookings Institution Press: 127-169.

Barsky, N. P., Catanach, A. H., & Lafond, C. A. (2008). Student turned consultant: Teaching the balanced scorecard using experiential learning. Advances in Accounting Education, 9, 287–305.

Beghetto, R. (2006). Creative justice? The relationship between prospective teachers' prior schooling experiences and perceived importance of promoting student creativity. Journal of Creative Behavior 40 (3): 149–62.

Beghetto, R. (2007). Ideational code-switching: Walking the talk about supporting student creativity in the classroom. Roeper Review 29 (4): 265–70

Bentley, K. A., Brewer, P. C., & Eaton, T. V. (2009). Motivating students to prepare for class and engage in discussion using the hot seat. Journal of Accounting Education, 27(3), 155–167.

Bhimani, A. (2008). The role of a crisis in reshaping the role of accounting. Journal of accounting and public policy, 27(6), 444-454.

Bonk, C. J. (1987). The effects of convergent and divergent computer software on children's critical and creative thinking Unpublished master's thesis, The University of Wisconsin at Madison.

Boyce, G. (2004). Critical accounting education: teaching and learning outside the circle. Critical perspectives on Accounting, 15(4-5), 565-586.

Burnett, S. (2003). The future of accounting education: A regional perspective. Journal of Education for Business, 78(3), 129-134.

Calk, R., Alt, K., Mills, S. K., & Oliver, R. (2007). The effective delivery of a streaming video course lecture. Accounting Education: An International Journal, 16(1), 81–93.

Catherine Usoff & Dorothy Feldmann (1998) Accounting Students' Perceptions of Important Skills for Career Success, Journal of Education for Business, 73:4, 215-220.

Cheng, C., A. Himsel, J. Kasof, E. Greenberger, & J. Dmitrieva. (2006). Boundless creativity: Evidence for the domain generality of individual differences in creativity. Journal of Creative Behavior 40 (3): 179–99.

Cohen, J. R., & Holder-Webb, L. L. (2006). Rethinking the influence of agency theory in the accounting academy. Issues in Accounting Education, 21(1), 17-30.

Craft, A. (2003). The limits to creativity in education: Dilemmas for the educator. British journal of educational studies, 51(2), 113-127.

Deborah F. Beard (2007) Assessment of Internship Experiences and Accounting Core Competencies, Accounting Education: an international journal, 16:2, 207-220,

Department for Education and Employment.(1997). Excellence in Schools. London: HMSO

Dunn, R. S., & Dunn, K. J., (1979). Learning styles/ teaching styles: Should they.. can they.. be matched? Educational Leadership, 36 238-244.

Eberly, M. B., Newton, S. E., & Wiggins, R. A. (2001). The syllabus as a tool for student-centered learning. The Journal of General Education, 56-74.

Eckhoff, A., & Urbach, J. (2008). Understanding imaginative thinking during childhood: Sociocultural conceptions of creativity and imaginative thought. Early Childhood Education Journal, 36(2), 179-185.

Fleith, D. (2000). Teacher and student perceptions of creativity in the classroom environment. Roeper Review 22 (3): 148–53

Futures, A. O. (1999). National Advisory Committee on Creative and Cultural Education. Department for Education & Employment.

Hennessey, B. A. (1999). Intrinsic motivation, affect, and creativity. Affect, creative experience and psychological adjustment, 77-90.

Hopwood, A. G. (1972). An empirical study of the role of accounting data in performance evaluation. Journal of accounting research, 156-182.

Horng, J. S., Hong, J. C., ChanLin, L. J., Chang, S. H., & Chu, H. C. (2005). Creative teachers and creative teaching strategies. International Journal of Consumer Studies, 29(4), 352-358.

Jackson, S., & Durkee, D. (2008). Incorporating information literacy into the accounting curriculum. Accounting Education: an international journal, 17(1), 83-97.

Kennedy, F. A., & Dull, R. B. (2008). Transferable team skills for accounting students. Accounting Education: An International Journal, 17(2), 213–224.

Kim, K. 2008. Underachievement and creativity: Are gifted underachievers highly creative? Creativity Research Journal 20 (2): 234–42

Lavoie, D., & Rosman, A. J. (2007). Using Active Student-Centered Learning-Based Instructional Design to Develop Faculty and Improve Course Design, Delivery, and Evaluation. Issues in Accounting Education, 22(1), 105-118.

Leong, R., & Kavanagh, M. (2013). A work integrated learning (WIL) framework to develop graduate skills and attributes in an Australian university's accounting program. Asia-Pacific Journal of cooperative education, 14(1), 1-14.

Love, N., & Fry, N. (2006). Accounting students' perceptions of a virtual learning environment: Springboard or safety net? Accounting Education: An International Journal, 15(2), 151–166.

Lovell, H., and MacKenzie, D. (2011). Accounting for carbon: the role of accounting professional organisations in governing climate change. Antipode, 43(3), 704-730.

Lux, D. (2000). Accounting educators' concerns about the AECC position and issues statements, Journal of Education for Business, 76(1), pp. 24–27.

M. J. F. Wouters. (2014). Focusing accounting curricula on students' long-run careers: recommendations for an integrated competency-based framework for accounting education. Issues in Accounting Education. Vol. 29 Issue 2, 295-317

Marquardt, C., & Zur, E. (2015). The role of accounting quality in the M&A market. Management Science, 61(3), 604-623.

Mudallal, Z (2015). Airbnb will soon be booking more rooms than the world's largest hotel chains. Quartz, 20 January. Viewed 12 December 2015, http://qz.com/329735/airbnb-will-soon-be-booking-more-rooms-than-the-worlds-largest-hotel-chains/

Murphy, E. A., & Hoeppner, C. J. (2002). Using technology and library resources in financial accounting courses. Journal of Accounting Education, 20(4), 331-346.

Niu, W., & D. Liu. 2009. Enhancing creativity: A comparison between effects of an indicative instruction "to be creative" and a more elaborate heuristic instruction on Chinese student creativity. Psychology of Aesthetics, Creativity, and the Arts 3 (2): 93–98.

Perspectives on Education: Capabilities for Success in Accounting Profession. Also known as the "White Paper." 1989. (New York: Arthur Andersen & Co., Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Main & Co., Price Waterhouse, and Touche Ross.

Rinkevich, J. L. (2011). Creative teaching: Why it matters and where to begin. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 84(5), 219-223.

Schacter, J., Thum, Y. M., & Zifkin, D. (2006). How much does creative teaching enhance elementary school students' achievement? The Journal of Creative Behavior, 40(1), 47-72.

Siegel, G., J. E. Sorensen, T. Klammer, & S. B. Richtermeyer. (2010b). The ongoing preparation gap in accounting education: A guide for change. Management Accounting Quarterly 11 (4): 1–11.

Siegel, G., J. E. Sorensen, T. Klammer, & S. B. Richtermeyer. (2010a). The ongoing preparation gap in accounting education: A call to action. Management Accounting Quarterly 11 (3): 41–52.

Siegel, G., J. E. Sorensen. 1994. What Corporate America Wants in Entry-Level Accountants. Management Account [USA], Vol. 76 Issue 3 26+. Web. February 20, 2020.

Spendlove, D. (2008). Creativity in education: A review. Design and Technology Education: An International Journal, 10(2).

Sternberg, R. J. (2003). Creative thinking in the classroom. Scandinavian Journal of Educational Research, 47(3), 325-338.

Walling, D. R. (2009). The creativity continuum. TechTrends: Linking Research and Practice to Improve Learning 53 (4): 26–27.

Watts, R. L., & J. L. Zımmerman. (1986). Positive Accounting Theory. Englewood Cliffs, N.J.: Prentice-Hall.

Wilmshurst, T. D., & Frost, G. R. (2001). The role of accounting and the accountant in the environmental management system. Business strategy and the environment, 10(3), 135-147.

Yilmaz C & Demirhan B (2016). Long-term Impact of Human Capital on Economic Growth: A Panel Data Analysis on the Balkan Countries British Journal of Economics, Management & Trade 13(1): 1-12.

Yılmaz ,C. & Demirhan, B. (2021). Direction of Causality between Financial Development and Economic Growth in Turkey Journal of Economics, Management and Trade 27(9): 22-37,

Yilmaz, C. (2015). The Usage of Failure Modes and Effects Analysis Technique while Process Improvement in Managerial Accounting Courses. Volume 10, Number 2, 41-59.

Yilmaz, C., Elitaş, C., & Erkan, M. (2009). From accounting scandals to global crisis. Suleyman Demirel University the Journal of Faculty of Economics and Administrative Sciences, 14(2), 141-156.

Zekany, K. E. (2020). Curricular Study of AACSB Accounting Programs: What Core Accounting Courses are Required to Earn an Accounting Generalist Degree? The Accounting Educators' Journal, 30.