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CURRICULUM & TEACHING STUDIES | RESEARCH ARTICLE

Exploring the need for numeracy skills in legal practice

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Abstract: Legal practices are perceived as an epitome of the battle between good and evil. However, a different battle over the preparedness of the next-generation lawyers is now trending amongst law practitioners. Analytical ability, attention to detail and logical reasoning were perceived as sufficient skillsets for legal practitioners. However, are these skillsets adequate when conducting a substantive legal analysis that might require some form of numeracy? To answer this question, two focus-group discussions were held with various legal practitioners, in order to explore the need for numeracy skills in legal practice. The findings revealed that numeracy skills are deemed highly important, since the majority of legal practices require numeracy at some or other stage. In view of the findings, it is recommended that curriculum practitioners start with the review process of these qualifications, in order to prepare industry-ready graduates that are equipped to deal with numeracy in a confident and knowledgeable manner.

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JEL Classifications: I23; C0; K0; K1

1. Introduction

The public opinion regarding legal practices in general, is epitomised as the continuous fight between good and evil. Nevertheless, in legal education, the fight is not about good or evil, but instead it is about the struggle between the fundamental methods of, and purpose to educate the next generation of legal practitioners (Gerst & Hess, 2008). Furlong (2008) a legal sector analyst at Queen's University in Canada, argues that in the past, analytical ability, attention to detail, logical reasoning, persuasiveness, sound judgment and writing ability, were perceived as sufficient skillsets for legal practitioners. However, these skills are fundamentally necessary, but no longer sufficient to practise law competently, effectively and competitively. Furlong (2008) added that collaboration skills, emotional intelligence, financial literacy, project management, technological affinity, as well as time management, are now added to the list.

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Biggs and Hurter (2014) agreed with Furlong (2008); and they added that there is an increase in concern amongst legal professionals regarding Bachelor of Laws (LLB) graduates, who lack basic numeracy, literacy, and research skills. This observation led to the investigation of how legal skills in general are incorporated within the LLB curriculum at South African universities. The findings indicated that a stand-alone skills-based model needs to be developed, in order to increase the minimum level of competence amongst LLB students. Furthermore, Biggs and Hurter (2014) found that the current body of existing knowledge, on how to integrate skills into the theoretical content of the LLB curriculum offered at South African universities, is limited. For the purposes of this paper, basic numeracy, as one of these identified skills, will be addressed.

Victor (2019) highlights the importance of financial literacy and states that all lawyers should have a solid understanding of complex mathematics, accounting and algebra, in order to meet their job requirements. Two University of Illinois legal scholars found that there is a significant relationship between law students' mathematical skills and the substance of their legal analysis and advice (Ciciora, 2013). These scholars further stated that, the end results of a given case may vary, depending on the lawyer's level of mathematical skills.

With that said, the current body of law studies can be classified into two broad streams, namely the mathematical techniques in the legal system and mathematical probability analysis in juridical fact-finding. Mathematical techniques in the legal system typically focus on the examining of mathematical techniques in the legal system used during a trial, in order to show the weight that should be given to identification evidence (Brilmayer & Kornhauser, 1978; Finkelstein & Fairley, 1970; Rogers & Molzon, 1992 Tribe, 1971); while the mathematical probability analysis in juridical fact-finding aims at understanding the mathematical probability, as an abstract theory, which is of little practical value in analytical courtroom decision-making (Cullison, 1969; Fairley & Mosteller, 2006; Fairley, 1975; Kaye, 1979).

However, the availability of studies examining the importance of mathematics literacy for legal practitioners is limited. Three notable exceptions are the studies by Craig (2018), Rowell and Bregant (2014) and Durrani and Tariq (2012). Craig (2018) argues that numeracy has been conceived in various ways; namely mathematical basics, mathematics for citizenship, the mathematics for social life, mathematics for informed decision-making, literacy with mathematics and the social practice of mathematics. Additionally, Craig (2018) highlighted the importance of numeracy, as a marginal concept, in many fields, including historically powerful ones like law.

The research conducted by Rowell and Bregant (2014) revealed how the substance of legal analysis varies, depending on the level of mathematical skills amongst law students. The findings indicated that law students with lower numeracy skills make less consistent decisions than do students with higher numeracy skills. However, Durrani and Tariq (2012) investigated the role of numeracy skills in graduate employability; and they found that poor numeracy skills limit any graduate's acquisition of employment, irrespective of the degree to which there is a lack of such numeracy. The results further showed that more than 48 percent of the respondents, ranging from law firms to health-care practitioners, indicated that applicants with mathematical knowledge obtained during their studies, are the preferred candidates for future employment.

The aforementioned studies also duly investigated the industry's perspective on the importance of numeracy skills in the legal profession. Furthermore, these studies were conducted in developed countries and not in a developing country, such as South Africa. Although these studies are interesting, little is known about the importance of numeracy in law in South Africa; and whether the current status of the law curricula being offered to students at university level in South Africa, is preparing graduates for such an industry.

In the light of the above, it may be concluded that there is a lack of research, focusing on the need of mathematical literacy for legal practitioners in South Africa. To address the identified need

and to explore the need of mathematical literacy for legal practitioners, the current study contributes to the existing body of knowledge by contextualizing the importance of numeracy for legal practitioners in South Africa.

From an academic perspective, it also contributes to theory development by discussing theoretically grounded constructs that apply to South Africa. From a university perspective, understanding the importance of mathematical literacy in the field of law can assist those involved with new curriculum development and in preparing and equipping future legal practitioners with the necessary skills and competencies, as demanded by the relevant industry.

With that said, this article introduces the role and importance of mathematical proficiency, also known as numeracy, in the lives of legal practitioners.

Based on the preceding contextual background and the literature review that follows, this study aims to meet the following research objective:

Research objective 1: To explore the need for numeracy skill in legal practices.

The remainder of the article outlines the following: Firstly, the theoretical framework guiding the research, then the methods used to design the study, and thereafter, the findings and discussion. In conclusion, practical implications, and recommendations, as well as some areas for future research have been provided.

2. The role of numeracy in legal practice

Mathematics is well integrated into the political, technological, industrial, military and economic systems of a country. It is important to understand the role of mathematics in the evolution of mankind (D'ambrosio, 2003). Mathematical proficiency, according to Reyna and Brainerd (2007), is increasingly being recognised as vital to the economic success of both individuals and nations.

Additionally, mathematics today is a diverse discipline that exposes hidden patterns that assist individuals in understanding the world around them. It deals with measurements and observations from science, the ability to reason, the ability to deduce and prove; human behaviour and social systems (Fatima, 2012). Speaking of reasoning, proof and human behaviour, Milot (2012) found that legal practitioners in general do not have an affinity for mathematics, leading to the avoidance of this discomforting topic. Understanding numbers, formulas and proofs can assist legal practitioners in thinking more logically, especially when dealing with emotionally charged cases in the courtroom, or during intense negotiations (Petersen, 2018).

Rowell and Bregant (2014) agreed with Milot (2012) and argued that a substantive legal analysis could vary significantly between legal decision-makers, when it comes to their level of mathematical skills, leading to significant legal confusion for parties. With that said, some individuals are quite confident in dealing with numbers, while others are less confident; but in professional terms, no legal practitioner should be able to tell a client: "I was never good at arithmetic."

The immediate reaction to the proposition that one needs to be numerate, may well be "Why?" The law is about words, not numbers; and rarely will you find calculations in legal textbooks. However, Hillborne (2018) argued that numeracy skills will be "massively more important in the new world of legal-service delivery." Numeracy skills are viewed as the way, that mathematical principles are being applied within the information age, based on real life scenarios (Steen, 2001). Furthermore, Steen (2001) highlighted that mathematics on the other hand, conveys the power of abstraction, inherited from the past such as geometry, algebra, trigonometry and analysis that one encounter mostly at school level.

The perceptions of first-time entry, legal practitioners are that in any event, an accountant would be present (DaRin, 2017) to support the lawyer. The student who has obtained a law degree, without doing any addition or multiplication, may well express the view that arithmetic was left behind happily at school, with no intention of ever returning to it (Ciciora, 2013). Unfortunately for those who do not feel comfortable with numbers, any suggestion that a legal practitioner can get by without a fundamental knowledge of numbers, is not true or realistic in legal practice.

Although legal textbooks may have few figures in them, they do include substantial coverage of the legal principles for dealing with figures and numbers. A contract-law textbook may not include figures, but most of the text ultimately relates to how much money a litigant party would get, if successful, in any claim for damages (Oman, 2007). When you have a contract case, all the principles for the awarding of damages, must be dealt with in terms of figures, and not just words. Also, as outlined below, the legal practitioner would most certainly not always have an accountant to assist, just because there are figures within their brief or instruction.

Although the immediate impression may be that a legal practitioner can get by with limited numerical ability, this is indeed not the case. In many contexts, a lawyer or legal practitioner, will still have to deal with figures (Milot, 2012). If one is not confident with numbers, now is the time to get to grips with the problem for the sake of future clients and career opportunities (Marcus, 2017).

In the simplest terms, legal practitioners must be able to inform the client what they might get after the settlement of a matter. The ability to deal with figures in a confident and knowledgeable manner would create a sense of ease and trust amongst all the parties (Milot, 2012). The historic academic approach followed by universities and or colleges, needs to be replaced by a more practical approach, in order to prepare future graduates for the reality of practice (Kromydas, 2017). For the purpose of this paper, numeracy is defined as the ability to practically understand and apply mathematical principles related to the field of law.

3. The relevance of numeracy in the life of a legal practitioner

During a personal interview, Francois Van Zyl (2022), a legal practitioner from Pretoria, South Africa, highlighted the following areas in law, in which numeracy plays an important role:

3.1. Types of practice

Numeracy plays a vital role in any area of legal practice, from the solely civil to the wholly criminal, albeit in slightly different ways. To provide some examples:

- (a) Commercial practice—The relevance of figures is obvious in dealing with companies or partnerships, especially as regards a detailed knowledge of accountancy and tax.
- (b) Estate and Conveyancing practice—The relevance is clear in actions for breach-of-trust, or for the administration of an estate, including claims for provisions to be made from the estate. This would specifically require a thorough knowledge of the relevant tax provisions and how to read a set of accounts. In drawing a liquidation and distribution account, a knowledge of numeracy plays an imperative role.
- (c) General common law practice—This type of practice has many elements, such as contract, delict, landlord and tenant arrangements and agreements, labour law, family law, welfare law, compensation and criminal practice, to name but a few.

3.2. Professional ability

A numerical ability is a matter of maintaining good professional standards. When a legal practitioner represents a client, they have the duty to do the best they can, which includes not only winning the case, if possible, but achieving the best result (Van Zyl, 2022). A legal practitioner must properly protect the position of a defendant, seeing that, unlike other professionals, lawyers are

not given a second chance to correct a legal error, once judgement has been rendered (Hedding, 2002). This relates not just to the issue of damages, but to every arithmetic aspect of a case. Van Zyl (2022) argues that by placing a client in a difficult financial situation after settlement, this might have negative consequences. Therefore, if a legal practitioner advises a client on what they can expect in damages, it is verging on the negligent not to advise whether the money will be liable to be taxed, or not, if that is the case. With that said, legal practitioners need to impress each client, and each opponent legal practitioner, by providing good quality advice and guidance (Milot, 2012), which would include calculations of some form or another.

3.3. Personal relevance

There is also a personal relevance for the legal practitioner in practice to have a reasonable arithmetical ability and a knowledge of the principles of accounting and taxation (Legal Career Path, 2019). It is expected that as a self-employed person, each legal practitioner would be responsible for drawing up a set of accounts each year; and s/he would be personally liable for paying their own tax (Van Zyl, 2022). Additionally, on a monthly basis, a legal practitioner must draft bills-of-cost associated with cases and day-to-day activities.

The reaction of those starting to train for the Bar, or side Bar, tends to be that the acquisition of numeracy skills is not important. In terms of the general rules of ethics and practice, the ultimate responsibility for financial issues in any legal practice begins and ends with the legal practitioner, regardless of whether s/he employs an accountant, or not.

4. Numeracy areas dealt with in a typical LLB curriculum

The unpreparedness, competences and skills of law graduates produced by universities in South Africa, is worrisome for various law professionals (N. Swanepoel & Snyman Van Deventer, 2012). Biggs and Hurter (2014) agreed with N. Swanepoel and Snyman Van Deventer (2012) and added that the majority of LLB graduates that enter the legal profession are inadequately equipped to practice law, due to a lack of basic numeracy, literacy and research skills. Biggs and Hurter (2014) further argued that the reasons for this unpreparedness might be because of shortcomings in the national schooling system, large class groups at university level, as well as student diversity.

Additionally, Van Niekerk (2013) mentioned that it is not the first time that this concern has been raised amongst law practitioners and in the media. The South African Law Deans Association (SALDA) pointed out that the duration of an undergraduate degree in law is too short to prepare students for practice. Swart (2010) mentioned that the Law Society of South Africa (LSSA) found that law graduates lack numeracy skills; and that it has highlighted the fact that it is unfair to the students and the market, to permit them to enter without being properly equipped with the necessary skills. Currently, the burden to train and equip these graduates, falls on the legal practitioners, who hire these graduates (Maree, 2021).

With that said, C. F. Swanepoel et al. (2008) are of the opinion that South African universities need to review the way that they prepare LLB students who enter legal professions after graduation. Law schools need to take responsibility and accountability for the development of the competences and skills of their graduates through the development of meaningful pedagogy (Gravett, 2018; Steen, 2001). The reluctance of universities to incorporate numeracy into their LLB programs is questionable; and this contributes to this fragmented view.

5. The research methodology

In this section, the research design, sampling, data-collection process, measurement and data analysis, are presented.

6. The research design

The research design is the overall strategy used within a study that integrates the different components of the study in a logical manner (Osanloo & Grant, 2016). In this research the

grounded theory, as developed by Charmaz (2014), was used, seeing that the data and existing theories based on this topic are incomplete and under-researched. A grounded theory, according to Charmaz (2014), involves the process of developing an understanding of participants' experiences by interpreting their actions and perceptions. With that said, by using the grounded theory, it has assisted the researchers to obtain a detailed understanding of how legal practitioners perceive the role of numeracy in law.

7. Sampling

Purposive sampling also known as judgemental, selective or subjective sampling, is a non-probability sampling method, in which the researcher uses his/her own judgement when selecting participants (Etikan et al., 2016). Through purposive sampling, eighteen legal practitioners were approached to take part in two focus-group discussions respectively. Specific inclusion criteria were used in selecting the participants for the focus-group discussions. The participants needed to be accredited members of the legal practice council of South Africa, have more than 15 years' experience in the field of law, and be based in Gauteng province.

8. The data collection

A focus group, as explained by Carey and Asbury (2016), is a qualitative research method that collects rich and detailed data through a semi-structured information session. Focus-group discussions are well-recognised research methods used in numerous publications related to law (Crooks et al., 2015; Hammer & Rogan, 2002; Howell, 2005; Katambi, 2020; Kaurin & Morgan, 2014; Keyzer et al., 2014; Krueger, 2006; Larcombe et al., 2016).

For the purpose of this research, two in-depth focus-group discussions were held with between six and ten law practitioners, respectively. The participants were formally invited by the researchers to take part in a virtual focus-group discussion that took place via the digital platform Microsoft Teams.

Specific steps were implemented to ensure that the research meet ethical standards. Before the commencement of the focus-group discussions, approval was obtained by the Faculty Committee of Research Ethics of Tshwane University of Technology, South Africa, Pretoria, Ref #: FCRE2022/FR/04/023-MS. After ethical approval was obtained and before data collection commenced, all participants received a consent form which explained the purpose, conditions, requirements, confidentiality and ethical aspects of the study. The participants all gave verbal consent as well as written consent before the focus-group discussion took place. Permission to record the sessions were also obtained beforehand.

A moderator was appointed to assist with the discussions, and to encourage participants to openly share their opinions and thoughts on numeracy skills in law. By conducting two focus-group discussions, assisted the researchers in obtaining detailed information and data saturation. This, in turn, ensured that the data collected, were adequate in number, in order to obtain a valid understanding of the topic under discussion (Hancock et al., 2016).

9. The interview guide

The interview guide used during the focus-group discussion were ethically approved before the commencement of the discussions. An open-ended question was prepared for the two focus-group discussions; and the participants did not view or received the question beforehand. The initial open-ended question was: "what role does numeracy play in law?" This was followed by additional questions that came forth from this question. The additional open questions that came forth from the discussion, ranged from engagement to exploration-type questions. The aim of these in-depth interviews conducted with the legal experts was to collect in-depth information about their experiences and perceptions regarding the importance of numeracy in law. The researchers, therefore, invited these legal experts to explain if and how numeracy is being applied within the legal practice.

10. The data analysis

By means of constant comparison, the group data were analysed. The constant-comparison method is a data-analysis process, in which the researcher looks for similarities and differences in the findings of the data that emerge from the focus group (Leech & Onwuegbuzie, 2011; Smulowitz, 2017). All the interviews with the legal practitioners were recorded on MS Teams and transcribed directly after each focus-group discussion. Both researchers verified the transcript by listening to the recording of the discussion, in order to ensure that all the phrases and quotations were captured correctly. The coding process started with the open coding of the two focus-group discussions, followed by the grouping of these codes into categories. Thereafter, five key themes that transpired from the process, were identified and reported on. The various themes that emerged during the focus-group discussions assisted the researchers in determining the saturation of the data (Memon et al., 2017). Figure 1, contains the coding process that was used in this study.

Figure showing excerpts of the interviews held with legal experts; key words were identified and coded where after similar words were grouped into ten categories; the categories were then grouped into five major themes.

11. Trustworthiness and credibility

For data to be accepted as trustworthy, the researcher needs to prove whether the data analysis was conducted in a consistent and precise manner (Nowell et al., 2017). By providing the recording, written transcripts and by disclosing the methods of data analysis, can assist in determining whether the process followed was credible or not (Birt et al., 2016).

To ensure the trustworthiness and credibility of this project, four measurements were in place. An unbiased moderator was appointed to facilitate and encourage participation in the focus-group discussions, as well as to ensure that the data collected were unaffected or influenced by how the two researchers perceived them; triangulation through conducting more than one focus group, assisted in comparing and by verifying the views and experiences of the participants, also known as constant-comparison analysis. By having long-lasting engagements with the focus-group participants, and by investing sufficient time to understand and explore the role of numeracy in law, assisted the researchers in identifying misinformation, as well as building trust. The open-ended questions that were asked were not shared with the respondents beforehand, in order to avoid any preconceived notions of the participants. It should be noted that one of the researchers did not hold any prior knowledge of law, and she was therefore objective and cautious during the analysis of the data. By implementing the above-mentioned measures, it was ensured that trustworthiness and credibility were maintained.

12. The findings

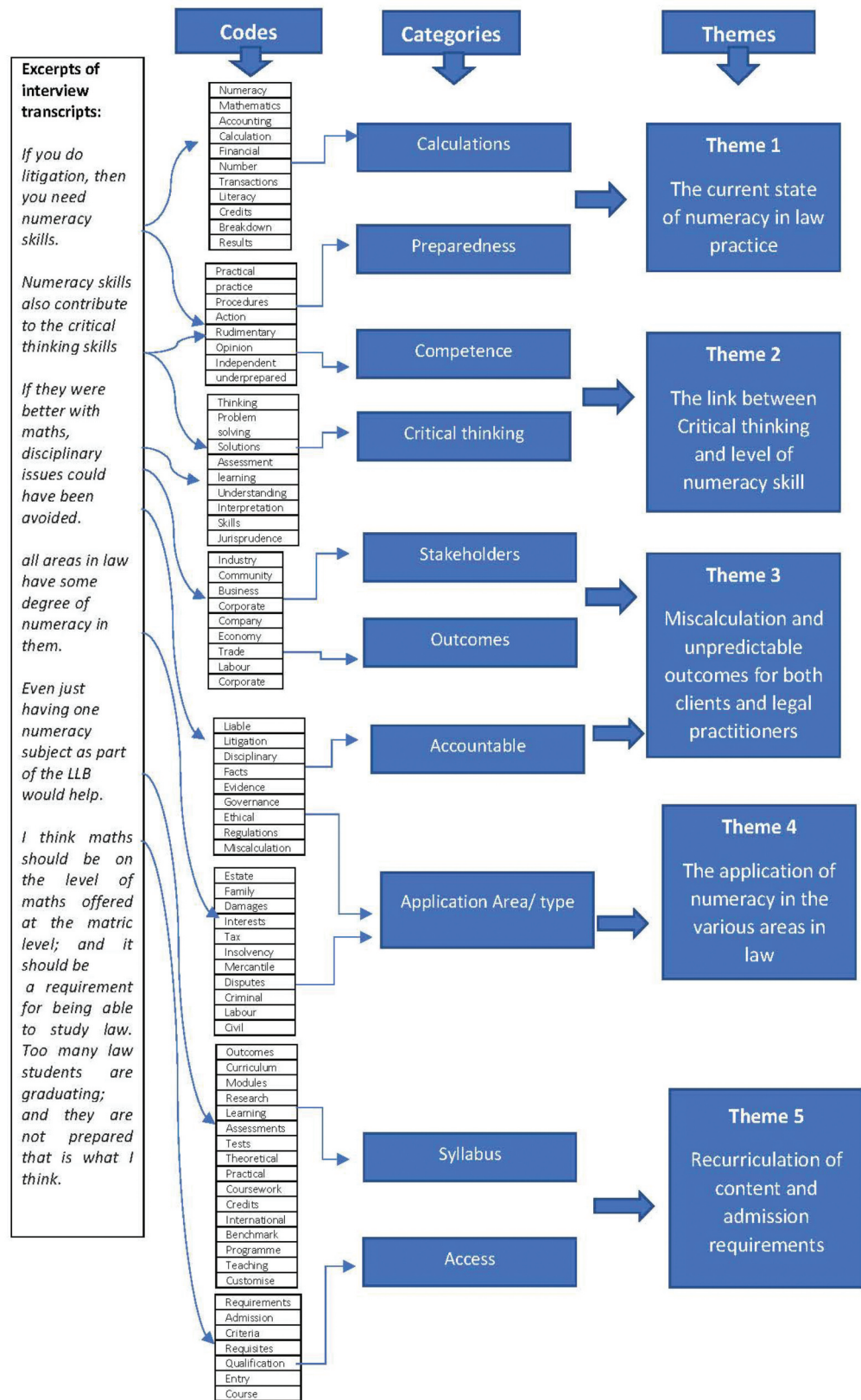
As indicated in Figure 1, the researchers identified five themes that transpired from the in-depth focus-group discussions. The following excerpts are some statements that were made by the legal practitioners during the two focus-group discussions. These statements may provide some context on the literature presented in this article.

12.1. Theme 1: the current state of numeracy in law practice

The moderator asked the participants to discuss the role that numeracy plays in law. Some valuable reflections regarding the current state of numeracy in law practice were provided by the participants. Some of these reflections are included below:

Numeracy skills play an important role, not just in substantive law issues, but also in the management of the practice as well. Whether you do your own accounting or not, we all know that there's a big difference between being a good lawyer and running a successful practice. Running a successful practice requires knowing something about business and knowing something about numbers, especially in the substantive law.

Figure 1. Overall coding process and mapping of themes.



If you do litigation, then you need numeracy skills to be able to calculate any damages, for example.

Numeracy skills are extremely important in any kind of transactional work, conveyancing and family law. There's hardly any area of law that doesn't include numeracy.

One can explain oneself better when one has good numeracy skills, seeing that when one does get to a point where one has to deal with some financial calculation in court, or with a client, one has the confidence, seeing that one is better equipped, which in turn, would lead to one being more self-assured

Interpreting this theme revealed that numeracy does play an important role in various areas of law, as well as in the management of a legal practice. The findings support those of Craig (2018), who argued that numeracy is vital in various fields of study, including that of law.

12.2. Theme 2: the link between critical thinking and level of numeracy skill

The practitioners believed that the level of numeracy skills of legal practitioner could influence their critical thinking and decision-making ability. Numeracy proficiencies could have an impact on the correctness when calculating damages and claims and the level of service reliability as reflected by some quotations below:

"I do think that numeracy skills also contribute to the thinking skills, by being able to analyse facts and numbers that go hand-in-hand. Critical thinking-skills can assist one in fact-finding and by understanding basic numerical skills that could assist a legal practitioner in the ability to make clear decisions when dealing with cases where one has to determine the current and future damages, or claims.

I think it's very important for law students as well; because I see with law students that they often study the material and just regurgitate it. And then even if you try to ask them the application and maths-related questions, then they struggle.

By having better numeracy skills, it can force legal practitioners to really think critically and analytically and engage more accurately with the clients and the problems at hand.

In this theme, critical thinking skills have been highlighted as being vital, when dealing with clients and cases. By understanding numeracy and how to apply it, this can provide legal practitioners with the ability to make more accurate and informed decisions. The findings concur with what Rowell and Bregant (2014) and Milot (2012) found, regarding how the level of mathematical skills influences the decision-making process of a legal practitioner. The higher the level of numeracy skills, the better informed are the decisions that are being made.

12.3. Theme 3: miscalculation and unpredictable outcomes for both clients and legal practitioners

The participants presented several practical cases of where legal practitioners, in court or during negotiation, made a numeracy-related decision that led to inconsistencies and negligence. The scenarios highlighted by the participants suggest that insufficient numeracy proficiencies could lead to negative careers outcomes such as disciplinary actions and making unfeasible business decisions in their own practices.

I deal with a lot of disciplinary matters, and for attorneys as well; they are frequently in trouble, because of some accounting error. But if they just understood accounting better, or they were better with maths, disciplinary issues could have been avoided.

Well, I think that many law graduates with poor numeracy skills would not even get to make decisions in practice, because if they had to start their own practices, and they approached

a bank with a business plan, the bankers would very quickly see whether someone is able to make the numbers work, or not. So, I think poor numeracy skills have a greater impact, and not just in court.

Having money in interest accounts for your clients is a risk, especially if you don't know how to deal with funds. Any miscalculation, or by not portraying the information correctly, can lead to a lot of problems for a legal practitioner. I mean, we have basic correspondents' accounts in conveyancing just in our board exams for book-keeping, but the lack of understanding relating to the numeracy involved in all of those calculations on a technical level in practice, is quite shocking.

When interpreting this theme, it is apparent that serious disciplinary matters can be avoided if legal practitioners have an adequate understanding of numeracy. Additionally, legal practitioners do not only need numeracy when in court, but also in the running of their practice. These findings support those of Hedding (2002), who found that legislative errors cannot be overturned, once a judgement has been rendered. Additionally, Johnson (2011) argued that attorneys' misconduct and negligence, are the failure to comply with the rules of conduct; and this provides grounds for disciplinary action.

12.4. Theme 4: the application of numeracy in the various areas in law

The focus groups discussions revealed that for legal practitioners to be successful in the diverse legal field they need to be equipped to apply numeracy correctly in various areas such as mercantile law and private law. Some examples of the areas where numeracy is required, are highlighted in the quotations below.

The number-one question that law graduates get wrong is on investment accounts. One cannot make any mistakes when dealing with large sums of money; and by determining the interest; this is vital.

Personally, I think that all areas in law have some degree of numeracy in them. However, some areas that I can think of are when one needs to calculate damages, costs, settlements and tax law.

Interpreting this theme it is clear that the need to apply numeracy in law is not limited to one area; but it is found in almost every part of law; hence, the importance of understanding how numeracy can be applied within this discipline. Milot (2012) found that there is not a case in law where a lawyer does not have to deal with some aspect of numeracy. This statement supports the arguments made by the participants, who had the same viewpoint on this matter.

12.5. Theme 5: recirculation of content and admission requirements

The discussions with legal practitioners revealed a direct need to prepare students for industry. By adding modules that contains numeracy or mathematics, to the law curriculums at universities in South Africa, will assist in preparing industry ready graduates. To implement this successfully, the admission requirements for students applying for any pre-graduate law degree need to be strict and their mathematics marks at matric or grade 12 level, should be at an acceptable level.

It would obviously help because when we find ourselves at the school for legal practice, trying to get people to join a practice that has a fundamental and basic understanding on a school level, is almost not there. And if I had studied a B Comm myself, when I went into practice, I think I would have been a lot better off if I had financial backing than I did with just simply, you know the BLC or whatever. So, I agreed.

I also agreed that it should form part of the LLB structure, as a separate module – not just as something built into another module.

Even just having one numeracy subject as part of the LLB would help.

That was the point I made at the beginning; there's a vast difference between being a good lawyer and running a successful law practice. So, running a successful law practice is all about making good business decisions. But I completely agree with everything that the previous speakers said.

I think maths should be on the level of maths offered at the matric level; and it should be a requirement for being able to study law. Too many law students are graduating; and they are not prepared ... that is what I think.

By improving the quality of students, the entry requirements need to change. Mathematics at matric level should be a prerequisite; and it would help in addressing the issue of having more professional, better qualified lawyers. In the end, I also think that accounting, a full-blown course in accounting at first- or second-year level of the LLB, would be adequate.

This theme revealed an apparent and urgent need for a numeracy module to be added to the law curriculums at universities in South Africa. Additionally, it was highlighted that universities need to revisit the current entry requirements to law programs by adding mathematics at grade 12 level as a prerequisite. The findings of C. F. Swanepoel et al. (2008), who emphasised that those responsible for new curriculum developments at South African universities need to review the way that they prepare LLB graduates for industry; are therefore supported.

In conclusion, the findings revealed that numeracy play a vital role in law and the under preparedness of graduates are visible when they enter the legal practice. With that said, universities in South Africa, need to review the entry requirements as well as the current law curriculum in order to prepare industry ready graduates that can make informed decisions in a confident manner.

13. Implications and recommendations

The focus-group discussion revealed that the numerical ability of a legal practitioner is very important, seeing that numeracy plays a vital role in most areas in law. However, the inability and under preparedness of law graduates, that enter the market, are worrisome to some senior practitioners. The feeling is that a legal practitioner with low numeracy skills would be more likely to be “fooled or tricked” by the way legal issues are presented in court. Seeing that limited numerical ability has led to various disciplinary matters for attorneys, who made accounting errors during discussions with clients, or during a court case. To avoid or limit such practices, the starting point would be at university level, where future law graduates need to be equipped with the necessary numeracy skills. This additional skill, would not only assist future graduates in the calculation of damages, but also in making more informed decisions, when dealing with cases where numeracy is critical to the outcome of the case.

One would think that the calculation of damages, costs, settlements and tax are the only areas where calculations are needed in law. However, both civil and criminal cases require some degree of numeracy; and it is therefore vital when one is litigating. With that said, future law graduates need to be able to apply mathematical skills more effectively, in order to reduce the fear of being charged with any misconduct. By having the necessary skills, enables one to be confident of a decision. After all, a person's life and finances are at stake.

The findings indicated that law graduates with poor numeracy skills would not have the ability in practice to make insightful decisions, when it comes to a case, or when approaching the bank for a possible loan. With that said, it is vital that law graduates need to understand the importance of mathematics and the role that it plays in developing their critical thinking skills, which ultimately produce an analytical problem-solving approach.

Some of the legal practitioners who are involved on a part-time basis at higher education institutions, mentioned that when students are asked during an assessment to determine basic calculations relating to a case, the students fail to understand the application of such issues. These findings have led to a general discussion on how universities should equip their students, in order to be ready for the industry. It was then suggested that the current entry requirements into law programs need to be revised, seeing that this might be the reason for the low numeracy skills amongst students. It is therefore recommended that educators involved in the development of the law curriculum should rethink what they deem as important, when allowing potential students to enroll for a qualification. By adding mathematics as a prerequisite, would improve the overall performance and preparedness of students for university, and for the legal industry. Furthermore, it is recommended that some of the following modules, be added to the current law curriculum; Firstly, basic financial calculations, in order to complete time sheets, to bill clients and to manage business expenses. Secondly, basic mathematics, to calculate issues relating to taxation, real estate, estates, trusts, contracts, securities, and insolvency matters. In addition, it will do no harm to add calculus and statistics to the curriculum, in an effort to enhance effective litigation in court cases when dealing with factual points related to health care law and patent law. An appreciation for algebra, logic, trigonometry, statistics and geometry at university level will enhance the ability of law students to understand scientific subjects connected with those areas within the law as discussed previously. Additionally, it is vital that undergraduate law students should learn how to analyse and apply financial data, through the study of financial accounting and business mathematics.

Further investigation into the actual reasons why mathematics does not form part of the current LLB program offered at the majority of universities, needs to be investigated. None of the participants could provide an answer for why numeracy has not been included in the law curriculum. It might be that public universities are moving towards a more philosophical approach, instead of a practical approach, which is worrisome for both academia and for the legal profession. By introducing a work-integrated learning component within the current curriculum, could bridge this gap by preparing industry-ready graduates. Furthermore, educators at law schools need to emphasise the importance of numeracy to learners, in order to change the perception amongst future graduates, who think that accounting, or other mathematics-related knowledge is being outsourced in practice; and therefore, it is not a necessity. Even if the numeracy-related aspects are being outsourced, a legal practitioner remains responsible and liable, when failing to comply with the rules of conduct.

14. Conclusion

Legal issues in which numeracy skills are needed, would not always be obvious at first; but it must be identified in dealing with a legal question, or a case. After intensive discussions with various experienced legal practitioners, they all agreed that this statement is indeed true. The purpose of this article was to explore the role of numeracy in law. The findings indicated that legal practitioners, are facing various numerically related issues on a daily basis; and they must therefore be numerically equipped, whenever the need arises. The findings further indicated that it is expected from legal practitioners to integrate legal issues with numeracy-related aspects with any problem presented to them. Consequently, legal practitioners are expected to identify a numeracy issue, in order to analyse the figures provided, and to deal intelligently with a situation, in which figures are not provided.

By changing the entry requirements of law programs, as well as the incorporation of numeracy as a module within the curriculum, would equip learners with the necessary skills, self-confidence and peace of mind. As educators and practitioners, it is our responsibility to deliver quality program offerings that are relevant and in line with the industry's needs. By adding those numeracy related skills, as referred to in the recommendations, to the law curriculum, takes us a step closer to filling the gap that is currently being experienced by frustrated senior legal practitioners and newly appointed candidate attorneys. Whoever said that the law and numeracy are worlds apart, has a rather limited grasp of what the law really entails (Clark, 2013)

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