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KNOWLEDGE, SKILL AND ATTITUDE GAP OF UNIVERSITY TAUGHT DIGITAL MARKETERS

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Acknowledgements

After having written this whole thesis, I just want to keep it short for my acknowledgements. **Thanks a lot**, to everyone that supported, commented and gave me advise for my thesis.

Abstract

Purpose:

The purpose of this study is to identify and address the gap between the course curricula of universities in digital marketing skills, knowledge, and attitudes in comparison to the ideal state which is based on an extensive literature review digital marketing KSA extended with state-of-the-art secondary data sources.

Design/Methodology/Approach:

Professors and teachers of the University of Twente and the Lappeenranta-Lathi University of Technology were interviewed and their answered compared to an ideal model deriving from the literature review. The literature review thus combines scientific and popular public literature in order to define the ideal state required by the industry. This study provides a framework that can be used to evaluate the digital marketing curricula of other universities.

Findings:

This study found that the UT and the LUT both miss out on teaching digital marketing students all the KSA required by practice. The biggest identified gap is between the skills taught within the domains of content management and design and impact. The second biggest difference was spotted in the area of attitudes. Knowledge wise, more attention should be devoted to the domains of content management and design and impact.

Research limitations:

A major limitation is the small sample size which is based on the case study design of this study. Therefore, it can serve to transfer the implications to other HEI context, but the findings are not generalizable.

Originality/ Value:

A few studies identify and address the gap between academics and practice. None of these studies has a focus on improvement of digital marketing curricula. The framework provided in this study can be used to analyze the gap between digital marketing in practice and what is taught at universities.

Keywords:

Digital marketing, marketing curriculum, digital marketing teaching gap

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List of abbreviations

AC	= Abstract conceptualization
AAC&U	= Association of American Colleges and Universities
AE	= Active experimentation
B2B	= Business-to-business
B2C	= Business-to-consumer
C2C	= Consumer-to-consumer
CEO	= Chief executive officer
CE	= Concrete experience
ELT	= Experimental learning theory
FAIR	= Findable, accessible, interoperable, and reusable
HEI	= Higher education institution
ILOs	= Intended Learning Outcomes
KSA	= Knowledge, skills, attitude
LEAP	= Liberal Education and America's Promise
LUT	= Lappeenranta-Lahti University of Technology
RO	= Reflective observation
RVG	= Reliability, validity and generalizability
SEO	= Search engine optimization
SQL	= Structured query language
TAT	= Traditional academical teaching
TOM	= Twente Education model
UT	= University of Twente
5Vs	= Volume, velocity, variety, veracity, value

1. Introduction

This study investigates the ***difference between digital marketing as taught at universities and digital marketing in practice***.

Several authors (Polonsky and Mankelow, 2000; Baker and Holt, 2004; Bolton, 2005; Polonsky and Whitelaw, 2005) are highly critical about the usefulness of marketing research. Despite not being directly the topic of this thesis, marketing research is nevertheless important to investigate. This is because teachers and researchers tend to be the same people. Thus, their topic of research, despite not having an impact on teaching quality will impact their teaching subject. Due to this, critical concerns about the usefulness of marketing research are highly relevant for this study. Thus, the taught marketing content at universities should also be critically viewed.

Furthermore, the academic marketing model is under the suspicion of separating from the realities of practice (Polonsky and Mankelow, 2000). It has been stated by Offstein and Chory (2016) based on Hall & Berardino (2006) Moosmayer (2012) and Robles (2012) how employers are impacted by this separation. This is because employers expect those young professionals, university graduates, to have the knowledge base, attitude and skills needed to work in their business and not having to teach them after they are hired. Especially the latter one is of special concern in this thesis as certain skills are a main component of every job posting.

1.1. Why does this gap exist?

The literature suggests that brick and mortar universities suffer under constant pressure of "'for-profit' educational institutions and geographically unconstrained online degree programs" (Offstein & Chory, 2016). Brick and mortar universities hereby refers to those universities that rely on on-site teaching with little possibility to do your degree from another physical location. This is also the reason why some faculties might be inclined to "engage in dishonest, calculated, or simply less innovative teaching behavior to obtain higher evaluations" (Billsberry, 2014; Clayson et al., 2006; Offstein & Chory, 2016). Hereby widening the gap between academical science and the real-life practice and skills needed by companies. This is further elaborated by Kannan and Li (2017) who describe what the major research topics are currently. The topics presented, are of a strategic and describing nature, less of an operational one.

As presented by Burke and Rau (2010), a university has three different purposes namely, teaching, research and practice. Especially in consideration how theoretical research can be,

universities should not forget to treat each of the components equally important. The cutting edge of science lies within research and naturally universities want to teach student the cutting edge established in their research. Despite that, researchers, which tend to be teachers at universities, need to be aware that universities also have a teaching and practice purpose. Meaning that researchers do not only have to research and think about the cutting edge of science but also consider teaching the base that is necessary to utilize the cutting edge of science.

1.2. Stakeholders

Determining more concrete what is important in practice, will help all the different stakeholders. It will lever universities to make their education and research more relevant again. The stakeholders considered in this study are:

- Students
- Companies
- Universities
- (Regional) Governments

The university students get better prepared for their future jobs and their potential employers do not have to spend a lot of time and money anymore to fill the gap by teaching their new employees the digital marketing reality. Companies which notice the better preparation of graduates for the job may tend to prefer hiring new employees from the according universities, what will help those universities again when this becomes known. For students of universities which do not adapt the curriculum to minimize the theory-practice gap, this study will help by providing which skills and capabilities they need in their future working life in digital marketing. Hence the students can use this study as a guideline for their personal development, using not only courses offered by universities but also non university related educational material, such as offered on Skillshare and other learning platforms. Universities profit from their better reputation teaching what is need in practice, thus students will rather go to their university and companies would rather hire from their maybe even want to collaborate with this university. For the regional government that means, the higher the education the more innovation can be expected and the more companies will be attracted to the proximity of the university. Thus, more jobs will be created and more taxes paid. For Governments this means the higher and better the education the better the prosperity of the country.

The focus of this study will be on digital marketing due to its rapidly evolving nature. As Anderson (2020) illustrates it, some of the platforms will have already been disappeared by the time written about it. This also makes this topic so interesting as there will be always something new to find, as it constantly changes.

1.3. Research question

Based on the number of groups that are impacted and the pace of change within digital marketing, it is from uttermost importance to investigate the difference in theoretical teaching and practical application of digital marketing.

Based on that two major research questions arise to analyze this digital marketing teaching gap. These are:

1) *What, if any, is the gap between the practice of digital marketing and what students learn in academia about digital marketing in terms of knowledge, attitude and skills?*
2) *How can university curricula be adjusted in order to fit the need of the market for well-educated marketers better?*

1.4. Proposed methodology

The research questions will be answered via a case study concerning the University of Twente and the Lappeenranta-Lahti University of Technology. In this study, first an elaborated literature research about the digital marketing skills required by the industry is conducted. Therefore, both scientific and popular public literature are combined in order to establish the need of the market, thus the need in practice. Using literature that comes from working professionals is specifically important for this study as the studies by Schlee and Karns (2017) and Di Gregorio, Maggioni, Mauri and Mazzucchelli (2019) used data from job postings but failed to capture the knowledge, skills and attitudes (KSA) that companies actually value most, hence the KSAs on which the actually hire job applicants (Schlee and Karns, 2017).

Combing the definition of what marketing is for professionals and companies, and what they deem as important in each of the domains therefore grants a more holistic view about what KSA should be taught at university compared to job postings evaluations. This is because companies and professionals tend to be more elaborative on their articles than on their job postings.

The ideal model which derived from the literature review is then used to evaluate whether or not the University of Twente and the Lappeenranta University of technology teach everything that is required by the practice. Thus, showing whether there is a gap or not.

1.5. Expected Findings

It is expected to find that the market searches for marketeers that do possess a wide range of knowledge, attitudes and skills including e.g. Adobe Cloud applications, in depth knowledge of SEO, as well as the ability to use the latest marketing software/ apps. Another possible outcome would be that the marketing department should include more elements of communicational studies as they learn how to target the individual which becomes more and more important with more individualized advertisements.

Of the curriculum study it is expected that the focus should be diverted from knowledge and soft skills to hard skill. By combing different learning approaches and topics students then will have a more nuanced KSA base to be of more value for the market

1.6. Structure of this thesis

In order to make this thesis-study as readable as possible the following structure is proposed. After abstract and introduction, the available academic theory concerning the general phenomenon of difference between the academic theory and the realities of practice will be examined. Hereby the findings shall be structured in a way that does not only highlight the differences but also the possible reasons for these differences and why they occur. Following the general differences, specific differences within the field of marketing will be investigated.

2. Literature Review

This chapter is intended to give the reader an overview of what research has already been conducted about the knowledge gap between digital marketing in practice and academical theory.

First this study highlights the importance of the topic based on the next evolutionary step of marketing, marketing 4.0. Second this chapter will display digital marketing definitions of practitioners and academics. Despite the aim of giving a unique and all explaining definition of digital marketing, it might be that the definition might be outdated, once it has been written, due to the "velocity, intertwinedness and therefore complexity of these elements" (Küng, 2008, p.83) of digital marketing. Based on the definitions of the practitioners and academics, important domains within digital marketing will be established and elaborated on. Then the study presents universal teaching methodology in order to be able to access the fit between university and marketing in practice. In the last part similar studies are presented that have already been conducted by other scientific scholars and how they help and why their results do not fit this study.

2.1. Marketing in sights of Industry 4.0

Digital marketing becomes increasingly more important in today's society. Especially with the technological advance and the concept of Industry 4.0, characterized by machine-to-machine-to-human connectivity and interaction. Based on the advances in technology and the establishment of Industry 4.0 Kotler, Kartajaya and Setiawan (2017) therefore define a new type of marketing, Marketing 4.0. This new stage of marketing has also been addressed by Fuciu and Dumitrescu (2018) describe marketing as an ever-evolving field. Next to the advances in integrating offline and online technologies (Kotler, Kartajaya & Setiawan, 2017), Marketing 4.0 is defined by being focused on the individual customer and not about customer groups anymore (Fuciu & Dumitrescu, 2018).

In contrast to marketing 3.0, which had clear borders between offline and online marketing, with marketing 4.0 these borders vanish (Jantsch, 2011, p.6-7). Demanding marketers to be educated in both online as well as offline marketing knowledge, skills, and attitudes (KSA) (Sawhney and Zabin 2001, as cited by Fletcher, Bell and McNaughton, 2004, p. 9). Based on the importance of digital technology, digital marketing therefore is a steppingstone towards marketing 4.0 where both digital and offline marketing will be fully integrated. With its

"velocity, intertwinedness and therefore complexity of these elements" (Küng, 2008, p.83) the KSAs of digital marketing and marketing 4.0 change frequently.

This is why it is important to also frequently analyze the topic of digital marketing and accordingly adjusts the KSAs taught at universities in order to facilitate and operate within the current environment and the next step of digital marketing.

2.2. Digital marketing definitions:

In order to establish an appropriate definition of digital marketing, different existing definitions from scientific and non-scientific authors are evaluated. In this context it has been discovered that digital marketing means the same as e-marketing, online marketing and internet marketing (Chaffey, 2013, p. 15)[1]. As those terms all mean the same, they will further be referred to as digital marketing.

2.2.1. Popular marketing definitions

"*The use of digital technologies to create an integrated, targeted and measurable communication which helps to acquire and retain customers while building deeper relationships with them"* (Smith, 2007, in Wymbs, 2011, p.94).

"E-marketing is any type of marketing activity that needs some form of interactive technology for its implementation" (Dann & Dann, 2011, p.4)

"Online marketing refers to marketing via the internet using company websites, online advertising, and promotions, email marketing, online video and blogs. Social media and mobile marketing also take place online and must be closely coordinated with other forms of digital marketing." (Kotler & Armstong, 2018, p. 516)

"E-marketing is marketing online whether via web sites, online ads, opt-in email, interactive kiosks, interactive TV or mobiles. It involves getting closer to customers, understanding them better and maintaining a dialogue with them. It is broader than e-commerce since it is not limited to transactions between an organization and its stakeholders, but includes all processes related to marketing" (Chaffey, 2013, p. 15).

[1] *Internet Marketing Glossary: Online Marketing Definitions & Terminology*. Direct Online Marketing. Retrieved 8 March 2020, from https://www.directom.com/glossary/.

*"Digital marketing **is** marketing in 2014 and we are all digital marketers. Every tactic in marketing today has an element of digital, of instrumentation."*

Tami Cannizzaro, Vice President of Marketing at IBM[2]

"The simple response would be that Digital Marketing leverages electronic devices (PC, Tablet, Phone, digital OOH) to provide an experience that influences a desired audience to take an action. […]

Digital Marketing is similar to modern architecture in many ways. Form follows function. An object can take several different shapes and be adorned with a variety of different elements, but it's up to the marketing architect to understand what will be acceptable to the masses and meet social expectations. If we go too far, we can be seen as interrupting, invasive and oversaturate the market. If we don't go far enough, then we will not meet the expectation of our target audience, which is to provide them the value and utility they are looking for at the right time and in the right place."

Kevin Green, Executive Director, Marketing at Dell (client)[3]

*"Marketing is an organisational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organisation and its stakeholders "(*Gronroos 2006, p.397)

2.2.2. This studies digital marketing definition

The above-named definitions in mind, the following definition should give a holistic view about what digital marketing is. Hereby it needs to be mentioned that the above selected ones are selected as they some of the best digital marketing definitions out there, based on the authority of the creators and the amount of recitations. Nevertheless, for the purpose of this paper a new definition is proposed that contains all important parts of all of the digital marketing definitions above:

"Marketing in 2020 is digital marketing using digital technologies; electronic tools, systems, devices and resources, to create an integrated, targeted and measurable 2-way communication which helps to acquire and retain customers while building deeper relationships with them.

[2] Odden, L. (2014). What is Digital Marketing? Definitions from 9 Brand Digital Marketers. Retrieved 8 March 2020, from https://www.toprankblog.com/2014/07/digital-marketing/

[3] Odden, L. (2014). What is Digital Marketing? Definitions from 9 Brand Digital Marketers. Retrieved 8 March 2020, from https://www.toprankblog.com/2014/07/digital-marketing/

Hereby not only concentrating on the communication to the stakeholders but also listening to the environment around the company."

2.3. Digital marketing domains

Important topics as proposed by Liu & Burns (2018) are big data, social media marketing, search engine optimization (SEO), metrics for digital marketing, Google Analytics, data mining and predictive analytics. Kotler and Armstrong (2018, p.516) further mention online advertising, websites, email marketing, promotions, online videos and blogs as well as social media and mobile marketing as topics. For this study mobile marketing is excluded as todays tools provide for seamless integration between different hardware. Therefore, also in theory a buzz word of marketing, in practice the application of this type only matters in terms of where to post, publish content and be available for the customer.

Dominant topics in marketing on the other side are different types of marketing analytics, may it be for SEO, big data, Google Analytics, data mining and predictive analytics and design which can be seen in video marketing, any type of advertising material, e.g. online banners, flyers (also handed out non-digital the design is made online).

With ever evolving technologies, new challenges and opportunities arise for digital marketers and those studying to be one (Buzzard et al., 2011, Hamill et al., 2010, Kaplan and Haenlein, 2010, Weiss, 2011).

Due to the multitude of tasks involved in digital marketing, this study proposes to categorize the different digital marketing domains into:

- *2.3.1 Analytics (research)*
- *2.3.2 Backend programming*
- *2.3.3 Content management*
- *2.3.4 Design and impact*
- *2.3.5 Reporting*

The above-named domains focus on the digital nature of digital marketing. Despite its nature, digital marketing still relies on components that are not digital. For individualized analytics one needs to understand statistics and how to apply it to data to get the information, one is searching

for. For digital design, not only the skills how to operate the tools but also design and persuasion knowledge is essential to acquire and retain customers with strong relational bonds.
This also aligns with the model presented by Royle and Laing (2014) which shows the skills and the knowledge of a digital marketer is composed of technical, organizational and research skills and knowledge.

2.3.1. Analytics

Davenport (2006) claimed that analytical companies are the leaders in their respective fields. The superiority of analytical skill is not only inherited to the companies but to most business functions (Provost & Fawcett, 2013, p.17), among these marketing, which historically relied more on art than science (Daverport, 2006). In 2018 there were 22 billion connected devices and by 2030 there will be 50 billion, according to a forecast by Statista [4]. With the increase of connected devices, the amount of data gathered increases as well. This data has been defined as big data by Kenneth Cukier back in 2014[5].As Siemens CEO Joe Kaeser says: "Data is the 21st century's oil"[6] and as any other fossil fuel data needs to be processed and refined. For data the refinement is done via data management and analytics. Based on data companies can then make data driven decisions which have both impacts on their competitiveness and their financial performance. (Provost & Fawcett, 2013, p.17; Wedel & Kannan, 2016). In the context of marketing analytics there are three main areas where it is used: *optimizing marketing-mix* spending based on available data, *personalization*, consumers' *privacy and data security issues* (Wedel & Kannan, 2016).

This chapter is intended to educate about analytics, the data that is needed for it, how this data is stored and what tools, applications and methods are currently available on the market for digital marketers. Using the metaphor of Kaeser this chapter starts to explain what data is and how it is stored.
Data analytics has 5 distinctive functions for marketing (Morgan et al., 2002), these are:

- Compliance with obligatory governmental rules and regulations as well as industry standards (Petty, 1997)

[4] Statista. (2019). Number of connected devices worldwide 2030 | Statista. Statista. Retrieved 12 March 2020, from https://www.statista.com/statistics/802690/worldwide-connected-devices-by-access-technology/.
[5] Cukier, K. (2014). *Big Data is better* [Video]. Retrieved 11 March 2020, from https://www.ted.com/talks/kenneth_cukier_big_data_is_better_data.
[6] Tellis, S. (2018). Data is the 21st century's oil, says Siemens CEO Joe Kaeser. Retrieved 11 March 2020, from https://economictimes.indiatimes.com/magazines/panache/data-is-the-21st-centurys-oil-says-siemens-ceo-joe-kaeser/articleshow/64298125.cms?from=mdr

- Indicating the company's overall productivity, therefore providing an early warning system to assure customer satisfaction and prevent customer complaints (Schibrowsky and Lapidus, 1994)
- Facilitate data-based planning, learning and decision making (Slater and Narver, 1995)
- Tacking performance and guiding strategic marketing activities and decisions to achieve the company's overall goals (Bonoma and Crittenden, 1988; Provost & Fawcett, 2013, p. 35-36)
- Communicating marketing goals and priorities to managers as well as employees (Ouchi, 1979, Govindarajan and Fisher, 1990)

IBM uses the 4Vs model[7] consisting out of the volume, velocity, variety and veracity. In addition to those four a fifth one has been proposed the value (Wedel & Kannan, 2016), see Table 1.

Table 1: 5Vs of Data

Volume	The volume of data describes the amount of data gathered ranging from terabytes to zettabytes[8]. The more data is stored the longer it takes to read out certain data from the system. Therefore, the hardware supporting the big data system needs to support the amount of data, occurring in the system. If not the performance of the same is sub-optimal.
Velocity	The velocity describes how often/ frequent data is retrieved and from how many devices at the same time[9]
Variety	Data can occur in many different shapes and forms e.g. numeric, text, network, images, and video files[10]
Veracity	As in statistics, big data is only useful when it is reliable and valid[11]. Hereby reliability and validity issues usually come from the operator side either a wrong data retrieval has been made or the collection of the data method was corrupt in the first place (Marz &Warren, 2015, p. 6)
Value	Data is only useful when it can be processed in a matter that gives a meaningful outcome. Therefore, it should always be evaluated whether and how data can improve the performance of a business unit and the whole company (Provost & Fawcett, 2013)

[7] IBM. The Four Vs of Big Data. Retrieved 11 March 2020, from https://www.ibmbigdatahub.com/infographic/four-vs-big-data
[8] IBM. The Four Vs of Big Data. Retrieved 11 March 2020, from https://www.ibmbigdatahub.com/infographic/four-vs-big-data
[9] IBM. The Four Vs of Big Data. Retrieved 11 March 2020, from https://www.ibmbigdatahub.com/infographic/four-vs-big-data
[10] IBM. The Four Vs of Big Data. Retrieved 11 March 2020, from https://www.ibmbigdatahub.com/infographic/four-vs-big-data
[11] IBM. The Four Vs of Big Data. Retrieved 11 March 2020, from https://www.ibmbigdatahub.com/infographic/four-vs-big-data

Due to increasing volume, velocity and variety, data gets more difficult to manage and therefore one moves from structured to unstructured data. This also depends on the available computing power to run a big data system the stronger the hardware the more demanding the data can be[12]. Therefore, databases can be classified based on three data structures, structured vs. unstructured[13] vs. semi-structured data[14] or otherwise into relational/SQL vs non-relational/no SQL databases[15]

2.3.1.1 Databases

First, relational databases rely on structured data and therefore the data is organised into rows and columns. The data for relational databases can come from multiple sources, it only needs to fit the columns of the database, hence the structure[16] [17] [18]. One feature of structured data is that it can be *easily adopted for machine learning language*. Another is that the operators of relational databases can *easily structure, input, read and manipulate data* for which SQL is one of the most used languages[19]. Here it shall be noted that SQL as programming language will be discussed in a separate chapter due to the multiple programming languages that can be used in marketing. Associated to its structure, there is a limitation of what information and data, relational data can capture and therefore relational databases are more quantitative than non-relational databases[20].

The second are non-relational databases which are the opposite of relational databases. They are unstructured and mainly consist of texts[21] but can also contain "video, audio, mobile activity, social media activity, satellite imagery, surveillance imagery" [22] data.

[12] Big data needs a hardware revolution. Nature.com. (2018). Retrieved 19 March 2020, from https://www.nature.com/articles/d41586-018-01683-1.
[13] Chen, M. (2019). Structured vs. Unstructured Data. Blogs.oracle.com. Retrieved 19 March 2020, from https://blogs.oracle.com/bigdata/structured-vs-unstructured-data.
[14] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[15] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.
[16] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[17] Chen, M. (2019). Structured vs. Unstructured Data. Blogs.oracle.com. Retrieved 19 March 2020, from https://blogs.oracle.com/bigdata/structured-vs-unstructured-data.
[18] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.
[19] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.
[20] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.
[21] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[22] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.

In contrast to relational data bases the data collected within non-relational databases is described as qualitative data as all data is gathered and not only specific data that fits within the specific frame of the relational database[23].

The last type of data that is semi-structured data [24] [25]. It can be described as structure data that does not follow the formal structure of structured data or other forms of data tables. Despite that, this type of data uses tags or markers that help to enforce different rows and fields within the data. Example for semi-structured data are JSON or XML [26] [27]. The purpose this type of data has, is being an easy export file using when using a sample of a whole data base. It can be used for easier analysis of unstructured data. As a last point it needs to be mentioned that some practitioners claim that actually all unstructured data is semi-structure data because one always can find some label items somewhere [28] [29] [30]

2.3.1.2 Managing data

When managing data for digital marketing one should pay attention that the data is FAIR (Jones et al., 2020). The FAIR framework was established by Wilkinson et al. (2016) to guide and assist data publishers to make their data *findable, accessible, interoperable,* and *reusable*. It is important for data to have those features to provide for further knowledge discovery and frequent innovation. Distinctive benefits of FAIR data are better data to knowledge transformation and better machine learning compatibility (Wilkinson et al., 2016). In Table 2 the elaborated FAIR principles adopted from Wilkinson et al. (2016) can be seen.

[23] Pickell, D. (2018). Structured vs Unstructured Data – What's the Difference?. Learn.g2.com. Retrieved 19 March 2020, from https://learn.g2.com/structured-vs-unstructured-data.
[24] Marr, B. (2019). What's The Difference Between Structured, Semi-Structured And Unstructured Data?. Forbes. Retrieved 21 March 2020, from https://www.forbes.com/sites/bernardmarr/2019/10/18/whats-the-difference-between-structured-semi-structured-and-unstructured-data/#1ba198a62b4d.
[25] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[26] Marr, B. (2019). What's The Difference Between Structured, Semi-Structured And Unstructured Data?. Forbes. Retrieved 21 March 2020, from https://www.forbes.com/sites/bernardmarr/2019/10/18/whats-the-difference-between-structured-semi-structured-and-unstructured-data/#1ba198a62b4d.
[27] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[28] Marr, B. (2019). What's The Difference Between Structured, Semi-Structured And Unstructured Data?. Forbes. Retrieved 21 March 2020, from https://www.forbes.com/sites/bernardmarr/2019/10/18/whats-the-difference-between-structured-semi-structured-and-unstructured-data/#1ba198a62b4d.
[29] Big Data Framework. (2019). Data Types: Structured vs. Unstructured Data | Big Data Framework©. Big Data Framework©. Retrieved 19 March 2020, from https://www.bigdataframework.org/data-types-structured-vs-unstructured-data/.
[30] Buneman, P. Homepages.inf.ed.ac.uk. Retrieved 21 March 2020, from https://homepages.inf.ed.ac.uk/opb/papers/PODS1997a.pdf.

Table 2: Fair data guiding principles, adopted from Wilkinson et al. (2016)

Findable	• (meta)data are assigned a globally unique and persistent identifier • data are described with rich metadata • metadata clearly and explicitly include the identifier of the data it describes. (meta)data are registered or indexed in a searchable resource
Accessible	• (meta)data are retrievable by their identifier using a standardized communications protocol • the protocol is open, free, and universally implementable • the protocol allows for an authentication and authorization procedure, where necessary • metadata are accessible, even when the data are no longer available
Interoperable	• (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation. • (meta)data use vocabularies that follow FAIR principles • (meta)data include qualified references to other (meta)data
Reusable	• meta(data) are richly described with a plurality of accurate and relevant attributes • (meta)data are released with a clear and accessible data usage license • (meta)data are associated with detailed provenance • (meta)data meet domain-relevant community standards

These principles are important to educate data managers. This becomes especially apparent when thinking about the fact that with data collection there are cost associated. Especially in the abundancy of data it is ever more important to make data easy analyzable. Therefore, a company should organize its data in such a FAIR way that it is possible to get a competitive advantage over its competitors. If the company does not manage it, in the best case they only lost money and in the worst the competitors using this knowledge, one could not find out, to gain competitive advantage over one's own company (Jackson, 2015, p.7).

Therefore, it is also important to know which type of tools to use for each type of purpose. A model that aims to help practitioners to use the right tool is proposed by (Provost & Fawcett, 2013, p.39-40), Figure 1.

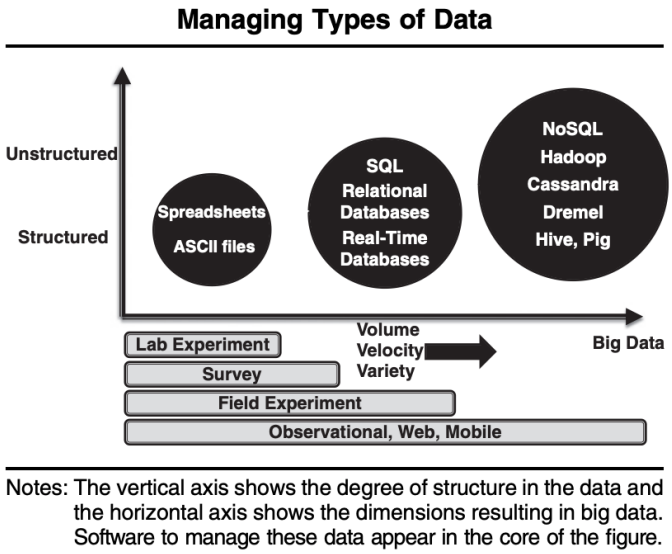

Figure 1: Managing data types derived from Provost & Fawcett (2013, p.39-40),

In this model the authors combine the 3Vs of data with the type of data, structured or unstructured. When spectating the figure one can directly see that when the Vs are bigger the type of data tends to be unstructured otherwise structured.

2.3.1.3 Origin of data

When talking about data, it is important to know where it comes from, hence how it is generated. In general data can be generated by humans, machines or a combination of both. For big data the same counts, just in bigger amounts, variety and frequency (Ghotkar & Rokde, 2016). Data generation by humans for example is when a person posts anything on social media or creates any type of content. This could even be some random measurement written on paper. Nevertheless, this last type would be analog and not digital data.

Data generation via machines can either come from various sensors, cameras, satellites, log files, bio informatics, activity tracker, personal health care tracker and many other sense data resources (Ghotkar & Rokde, 2016) or from supervised or unsupervised data mining. Hereby data mining is special, as it creates new data sets based on other already existing data. Thus, it quite often uses human generated data, e.g. from social media platforms. Supervised data mining has a specific target in mind, unsupervised not (Provost & Fawcett, 2013, p. 24).

Data can be generated everywhere and at any time where information is generated and needs to be stored. Therefore, any industry generates data, including military and governments.

Knowing how data is generated becomes of extreme importance when looking at the prognosis made by Statista. There will be around 175 Zetabytes of data by 2025[31] see Figure 2.

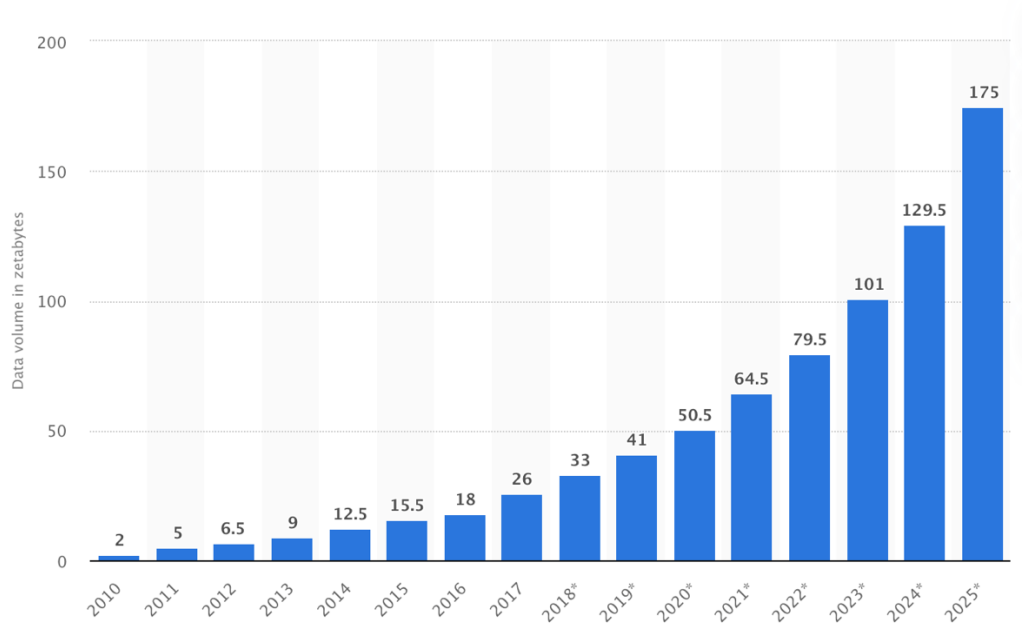

Figure 2: Amount of data created by 2025 derived from Statista[32]

2.3.1.4 Tools that marketers should use

This paper has already shown what marketing analytics is, what data is, how to define it and what guidelines there are when working with data. This part shows which tools are suggested by scientific literature and the web. There is a multitude of tools that are used for different purposes. Therefore, the goal here is not only showing which tools are there, but also how to categorize them.

2.3.1.5 Analytic tools.

There are analytical tools for every type of digital marketing. Therefore, this part highlights some of the most important areas for analytics as well as available tools. They are social media platforms, SEO optimization and e-mail marketing.

The Cambridge dictionary defines social media as "websites and computer programs that allow people to communicate and share information on the internet using a computer or mobile phone"[33]. Social media, like Facebook and Twitter, played an innovative role in business

[31] Data created worldwide 2010-2025 | Statista. Statista. (2020). Retrieved 25 March 2020, from https://www.statista.com/statistics/871513/worldwide-data-created/.
[32] Data created worldwide 2010-2025 | Statista. Statista. (2020). Retrieved 25 March 2020, from https://www.statista.com/statistics/871513/worldwide-data-created/.
[33] *SOCIAL MEDIA | meaning in the Cambridge English Dictionary*. Dictionary.cambridge.org. (2020). Retrieved 26 March 2020, from https://dictionary.cambridge.org/dictionary/english/social-media.

communications and can be used as a credible business tool (Akar, & Topçu, 2011; Levy & Birkner, 2011; Michaelidou, Siamagka & Christodoulides, 2011). The importance of social media becomes clear when looking at the time the average internet user spends on social media, which in 2019 was, 144 minutes a day [34]. This is over 2 hours of media exposure a day which can be utilized by marketers. The way to do so is by understanding the underlying consumers' topics, trends, or emotions and to find, target, manage and retain their customers (Liu & Burns, 2018).

Leonardi et al. (2013) describes two main uses of social media for a firm. The first one is the way how a company communicates with its external environments such as customers, competitors, vendors and the public at large. The second use is for the company's internal communication as well as social interaction. In accordance with its different purposes social media also includes a variety of formats (Liu & Burns, 2018)., social networks e.g. Facebook, video content communities e.g. Youtube and Tiktok (Anderson, 2020), picture content communities e.g. Instagram and virtual worlds e.g. Second Life (Kaplan & Haenlein, 2010). Tools belonging to the first category are:

- Facebook 2449 million users[35]
- Instagram
- Tiktok
- Snapchat
- Youtube 2000 million users[36]

Tools that belong to the second category are for example slack and Microsoft teams. These tools are usually used for internal communication and do not deliver big data from outside hence play little role for analytics. Therefore, these tools will be more highlighted in the chapter about reporting.

For SEO in Europe tools such as Google Analytics are highly important, whereas in other areas of the world where other search engine are predominant specific tools for those search engines are more important.

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[34] Global time spent on social media daily 2018 | Statista. Statista. (2020). Retrieved 26 March 2020, from https://www.statista.com/statistics/433871/daily-social-media-usage-worldwide/.
[35] Most popular social networks worldwide as of January 2020, ranked by number of active users. Statista. (2020). Retrieved 26 March 2020, from https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/.
[36] *Most popular social networks worldwide as of January 2020, ranked by number of active users*. Statista. (2020). Retrieved 26 March 2020, from https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/.

2.3.1.6 Marketing metrics

Measurements is another critical aspect of digital marketing. It is important to collect user data for a customer behavior analysis to make changes to the marketing strategy accordingly. As Lord Kelvin describes it:

"If you cannot measure it, you cannot improve it."[37]

Measurements are essential for any part of a business, including marketing.

"Without feedback from precise measurement…invention is doomed to be rare and erratic. With it, invention becomes commonplace."- Bill Gates [38]

Therefore, this chapter shall educate about some of the most common marketing measures. Based on Gonçalves (2017) those measures can be separated in four categories. These categories are:

- Audience
- Content,
- Interactions
- Off-category

Each of the category's hereby reflects an area of importance for digital marketing. The *audience* category reflects the in traditional marketing terms the target group. Hence it shows which type of customer are interested in a certain product or service.

The *content* category measures how the digital content posted performs e.g. which post are best fitted for the selected target group.

Interactions investigates all communication points. Hence everywhere the brand or a product or service of the brand is mentioned these measures evaluate these comments. Hence this type of measure also includes sentiment analysis.

Within the *off-category* everything that does not belong in any other goes inside this category.

[37] *physicsworld.com*. In praise of Lord Kelvin. (2017). Retrieved 23 April 2020, from https://physicsworld.com/a/in-praise-of-lord-kelvin/.
[38] Hänel, L. (2017). *The importance of measurement*. Medium. Retrieved 23 April 2020, from https://medium.com/@Liamiscool/the-importance-of-measurement-f843a9269a60.

On top of these measures, *cost* is recommended as an additional category, because every business has to make profit or at least needs to cover all their cost to operate. Therefore, the cost measure helps visualizing the expense of business and if a certain marketing campaign is worth it. Examples for each of the categories are (Gonçalves, 2017):

Audience

- Follower count over time
- Influencers within our audience
- Location, gender, age, interests
- Search trends[39]

Content

- Website traffic[40]
- Channel specific traffic[41]
- Number of posts over time
- Type of posts over time
- Sponsored post distribution

Interactions

- Bounce rate
- Interaction count by content and over time
- Types of interactions by content and over time
- Comments and text analysis on comments
- Mentions and text analysis on mentions
- Questions and responses

Off-category

- Interaction or engagement rate
- Post/interactions comparison
- Key metrics table
- Off-audience influencers
- Impressions and reach

[39] Alim, R., Hou, Z., Teague, L., Hrach, A., & Griffiths, J. (2020). *10 Simple and Reliable Digital Marketing Metrics*. Content Marketing Consulting and Social Media Strategy. Retrieved 23 April 2020, from https://www.convinceandconvert.com/digital-marketing/10-simple-and-reliable-digital-marketing-metrics/.
[40] Alim, R., Hou, Z., Teague, L., Hrach, A., & Griffiths, J. (2020). *10 Simple and Reliable Digital Marketing Metrics*. Content Marketing Consulting and Social Media Strategy. Retrieved 23 April 2020, from https://www.convinceandconvert.com/digital-marketing/10-simple-and-reliable-digital-marketing-metrics/.
[41] Alim, R., Hou, Z., Teague, L., Hrach, A., & Griffiths, J. (2020). *10 Simple and Reliable Digital Marketing Metrics*. Content Marketing Consulting and Social Media Strategy. Retrieved 23 April 2020, from https://www.convinceandconvert.com/digital-marketing/10-simple-and-reliable-digital-marketing-metrics/.

Cost

- Cost per lead
- Cost per conversion[42]
- Cost per visitor[43]

All these measures are useless if they are not used with a purpose. Järvinen and Karjaluoto (2015) established the three main uses of digital marketing metrics. These are being a tool that *illustrates the progress* towards the marketing objectives, *using the data created by the measures effectively* within the company and a *connection between internal and external processes.* Finally, it needs to be mentioned that the measures always need to fit to the objectives of the company. Hence an in-depth education how each of the measures works is suggested for a digital marketing curriculum.

2.3.1.7 Benefits of data management for marketers

For marketers, data management brings a variety of benefits. Although, there is little academical research about the benefits, one can find a multitude of sources on the web showing listing up benefits. Ranging from purely cost benefits, over effectiveness of content, alignment of product/service and customer demands, becoming customer centric and improve internal processes [44] [45] [46] [47]. Due to the multitude of benefits, that can easily be found and accessed by everyone on the internet, this study is not further evaluating those.

[42] Allison, T. (2019). Demystifying Digital Marketing: Using Metrics to Assess Effectiveness. *CPA. Dealer Magazine*. Retrieved 20 April 2020.
[43] Blair, I. *18 Essential Metrics to Measure Your Digital Marketing - BuildFire*. BuildFire. Retrieved 23 April 2020, from https://buildfire.com/essential-metrics-measure-digital-marketing/.
[44] Roberts, C. (2019). 8 Remarkable Benefits of Data Management in Marketing Automation. https://www.insightsforprofessionals.com. Retrieved 24 March 2020, from https://www.insightsforprofessionals.com/marketing/marketing-technology/benefits-data-management-in-marketing-automation.
[45] Roberts, C. *8 Remarkable Benefits of Data Management in Marketing Automation*. https://www.insightsforprofessionals.com. Retrieved 28 April 2020, from https://www.insightsforprofessionals.com/marketing/marketing-technology/benefits-data-management-in-marketing-automation.
[46] Harris, J. (2015). *Top 5 benefits of managing data where it is*. The Data Roundtable. Retrieved 28 April 2020, from https://blogs.sas.com/content/datamanagement/2015/11/19/top-5-benefits-managing-data/.
[47] Lehr, S. (2019). *The Importance Of Data Management In Companies - RingLead*. RingLead. Retrieved 28 April 2020, from https://www.ringlead.com/blog/the-importance-of-data-management-in-companies.

2.3.2. Backend programming

In a world that becomes increasingly data driven, programming languages accordingly become more important for digital marketers[48]. Liu and Burns (2018) define, as one of the few scientific authors, programming languages as being important for digital marketers. They specifically advise for R or python within a digital marketing course (Liu & Burns, 2018). Eisenmann (2013) also found proof that teaching digital marketers coding skills is valuable for students and alumni alike. Despite little attention of this topic within the scientific marketing literature it is highly recommended for practitioners to be educated in programming. Benefits of knowing coding for digital marketers are a better base for discussions with the developers and that simpler code fixes can be done by the marketers themselves. This provides room to experimentation[49] and help for example SEO rankings or customer analysis. Among the most useful programming languages for digital marketing are:

- Python[50] [51]
- R (Chapman & Feit, 2015)
- SQL[52] [53]

- HTML[54] [55]
- CSS [56]
- Java script[57]

Hereby it can be seen that being proficient in programming language is useful for mainly two purposes. The first being for proper web pages building and managing and the second for the managing and evaluating data [58].

[48] Mester, T. (2018). *The Best Programming Languages for Digital Marketers*. CXL. Retrieved 21 April 2020, from https://cxl.com/blog/programming-languages-marketers/.
[49] Chandrasekhar, S. (2016). Quora.com. Retrieved 21 April 2020, from https://www.quora.com/Do-you-need-programming-skills-for-digital-marketing-job.
[50] Mester, T. (2018). *The Best Programming Languages for Digital Marketers*. CXL. Retrieved 21 April 2020, from https://cxl.com/blog/programming-languages-marketers/.
[51] Coder Academy. (2016). *5 Coding Skills That Will Elevate Your Digital Marketing Career*. Medium. Retrieved 21 April 2020, from https://medium.com/@coderacademy/5-coding-skills-all-digital-marketers-should-learn-4b77cae999aa.
[52] Mester, T. (2018). *The Best Programming Languages for Digital Marketers*. CXL. Retrieved 21 April 2020, from https://cxl.com/blog/programming-languages-marketers/.
[53] Coder Academy. (2016). *5 Coding Skills That Will Elevate Your Digital Marketing Career*. Medium. Retrieved 21 April 2020, from https://medium.com/@coderacademy/5-coding-skills-all-digital-marketers-should-learn-4b77cae999aa.
[54] Coder Academy. (2016). *5 Coding Skills That Will Elevate Your Digital Marketing Career*. Medium. Retrieved 21 April 2020, from https://medium.com/@coderacademy/5-coding-skills-all-digital-marketers-should-learn-4b77cae999aa.
[55] Chandrasekhar, S. (2016). Quora.com. Retrieved 21 April 2020, from https://www.quora.com/Do-you-need-programming-skills-for-digital-marketing-job.
[56] Chandrasekhar, S. (2016). Quora.com. Retrieved 21 April 2020, from https://www.quora.com/Do-you-need-programming-skills-for-digital-marketing-job.
[57] Mester, T. (2018). *The Best Programming Languages for Digital Marketers*. CXL. Retrieved 21 April 2020, from https://cxl.com/blog/programming-languages-marketers/.
[58] Coder Academy. (2016). *5 Coding Skills That Will Elevate Your Digital Marketing Career*. Medium. Retrieved 21 April 2020, from https://medium.com/@coderacademy/5-coding-skills-all-digital-marketers-should-learn-4b77cae999aa.

2.3.3. Content management

Content management is closely related to the annotation of customer value. As Doyle (1989, p. 78) describes customer value is "*not what the producer puts in, but 'what the customer gets out*". Hence content management is about what the customer values about the company and not purely what the company is capable of doing technically. Therefore, being able to serve the correct customers with the correct content at the correct time is important, hence good content management.

In the past there was a differentiation between content marketing and marketing content. The first being the content that can actually be bought such as newspapers, software and hardware (e.g. Amit and Zott 2001; Berry 2006; Fetscherin and Knolmayer 2004; Kaiser 2006; Palmer and Eirken 2000; Premkumar 2003; Swatman et al. 2006; Vaccaro and Cohn 2004). In contrast marketing content is the material that is used for getting attention and informing the customer about a product or service. Customer value becomes increasingly volatile due to the numerous amounts of digital information and content, shaping the perception of the customer (Rowley, 2008). In the digital world information becomes the dominant element. Hence, both content marketing and marketing content are about information (Janal 1998). Thus, distinguishing between marketing communication and information becomes increasingly more difficult (Rowley, 2008). Due to this fusion of content marketing and marketing content it becomes more important for marketers to have every information in sight and therefore a content management system becomes important.

In general, a content management system is used for "regulatory compliance and risk management, retention and dissemination of business knowledge, and cost and process efficiencies" [59]. Hereby there is a difference between content management and content service. A content service is for information published in a specific location while content management concerns itself with all the available content[60]. Content services hereby can be used by a wide variety of industries and business units as they are not specific to marketing or digital marketing. Bigger companies tend to have bigger and more complex content management systems while smaller companies have smaller systems including less information and information types. This is because despite the benefits of having all data and information at one

[59] King, T. (2019). *Data Management vs. Content Management; What's the Difference?*. Best Data Management Software, Vendors and Data Science Platforms. Retrieved 30 April 2020, from https://solutionsreview.com/data-management/data-management-vs-content-management-whats-the-difference/.
[60] King, T. (2019). *Data Management vs. Content Management; What's the Difference?*. Best Data Management Software, Vendors and Data Science Platforms. Retrieved 30 April 2020, from https://solutionsreview.com/data-management/data-management-vs-content-management-whats-the-difference/.

spot maintaining and operating such management systems is costly. Also, for easier access and clarity content management systems might be split up into content services. In principle this data storage can be performed by a variety of tools. Even excel spreadsheets can be used for such. Nevertheless, companies tend to use a more dedicated content management systems due to the associated advantages. Important advantages of such a dedicated content management system are that they include a data history, data relations and the capability to post content from the content management system. Thus, one can see all changes that have been performed and therefore stays accurate [61].

Having portrait what and why a content management system is useful, the question arises what the difference between a content management system and a more sophisticated analytical management system for marketers is. Here similar to the differences between content marketing and marketing content, the differences between content management tools and analytical tools are disappearing. This is because every piece of shared content gets analyzed and the market gets analyzed to share more content. Hence both of these systems heavily rely on each other and therefore todays tools often possess both. There are ample of different analytic and marketing content tools. Some tools that allow for plenty functions are Falcon.io and Content Studio[62].

Despite the tools, there is one final component left that is essential when talking about content management for marketers. This is how to create valuable content for the customers. Therefore, the communications science theories such as the one from Robert Cialdini are highly useful. Cialdini 6 principles of persuasion[63] and recently 7 principles of influence[64]. These principles are important because humans despite all information available about a product and service like to keep their decision making simple[65]. Cialdini's principles can help to shape a customer's opinion and therefore what they value.

[61] Vasont Systems. *What is content management? | Resources*. Vasont Systems. Retrieved 30 April 2020, from https://www.vasont.com/resources/what-is-content-management.html.
[62] Capterra.com. *Content Marketing Software - Review Leading Systems*. Capterra.com. Retrieved 3 May 2020, from https://www.capterra.com/sem-compare/content-marketing-software?gclid=Cj0KCQjw17n1BRDEARIsAFDHFexpxP_S9j3qB8j6_ocL2oHsErsKt1XOVDieLHKAT6wTa12H_-bpIi8aAtDJEALw_wcB.
[63] Cialdini, R. *The 6 Principles of Persuasion by Dr. Robert Cialdini [Official Site]*. INFLUENCE AT WORK. Retrieved 3 May 2020, from https://www.influenceatwork.com/principles-of-persuasion/.
[64] Wolf, T. *How to Boost Conversions with Cialdini's 7 Persuasion Priniciples*. GetUplift. Retrieved 3 May 2020, from https://getuplift.co/7-persuasion-principles/.
[65] Cialdini, R. *The 6 Principles of Persuasion by Dr. Robert Cialdini [Official Site]*. INFLUENCE AT WORK. Retrieved 3 May 2020, from https://www.influenceatwork.com/principles-of-persuasion/.

The principles are:

- Reciprocity
- Scarcity
- Authority
- Consistency
- Liking Consensus[66]
- Unity[67].

These principles are, among others[68], important guidelines for marketers when they post and share content because if a marketer is not consciously aware about these principles, he or she might fail to attract the customer he wanted to attract in the first place.

[66] Cialdini, R. *The 6 Principles of Persuasion by Dr. Robert Cialdini [Official Site]*. INFLUENCE AT WORK. Retrieved 3 May 2020, from https://www.influenceatwork.com/principles-of-persuasion/.
[67] Wolf, T. *How to Boost Conversions with Cialdini's 7 Persuasion Priniciples*. GetUplift. Retrieved 3 May 2020, from https://getuplift.co/7-persuasion-principles/.
[68] *Communication Studies theories: overview by category | University of Twente*. Universiteit Twente. Retrieved 3 May 2020, from https://www.utwente.nl/en/bms/communication-theories/.

2.3.4. Design

Creating valuable content for customers does not only depend on what the content is but also how it is presented. Therefore, a marketer should not only know about the Cialdini's principles but also how to best apply them[69]. The study of design has been a predominant topic of study for marketers and is deeply rooted in society. Already antique craftsman were not only about making the best product but also how to make the product look as pleasing as possible in order to stand out among other craftsman, this trend has been carried through the middle ages, the railroads of the 20th and up till today (Bloch, 2011), where companies such as Apple achieved record profits due to design[70]. This attention to design becomes increasingly more important with an improving design standard on all web sites and social media platforms[71]. This importance of design and content can be seen by people that started their career on social media platforms, such as YouTube or Instagram as a hobby and now those bloggers influence millions of other people[72].

This importance of design has been investigated by Sample, Hagtvedt and Brasel (2019). They classify design criteria in 5 categories;

- Illuminance
- Shape
- Surface color,
- Materiality
- Location.

The subcomponents of each criterion can be found in the appendix, Table 13 and Table 14. They explain what each of the areas is about and what psychological effects they have on the consumer. Here the most important psychological findings of the paper will be stated. The brighter the luminance the more likely it is that customers recognizes a product. Furthermore, the customer is likely to change their buying behavior due to the feeling the presence of other people more, hence they make healthier food choices and less authentic choices (Sample, Hagtvedt & Brasel, 2019). Especially when it comes to color there are a multitude of psychological effects (Bagchi, & Cheema, 2013; Gorn, Chattopadhyay, Sengupta, & Tripathi, 2004; Lee, Noble, & Biswas, 2018; Sample, Hagtvedt & Brasel, 2019). At last they mention the location where content is positioned. Therefore, location is not only the physical position

[69] Cialdini, R. *The 6 Principles of Persuasion by Dr. Robert Cialdini [Official Site]*. INFLUENCE AT WORK. Retrieved 3 May 2020, from https://www.influenceatwork.com/principles-of-persuasion/.
[70] Turner, D. (2009). *Apple to Great Recession: 'What, me worry?'*. Macworld. Retrieved 4 May 2020, from https://www.macworld.com/article/1140653/apple_recession.html.
[71] Kane, G., & Pear, A. (2016). *The Rise of Visual Content Online*. MIT Sloan Management Review. Retrieved 4 May 2020, from https://sloanreview.mit.edu/article/the-rise-of-visual-content-online/.
[72] Boyd, J. (2020). *The Most-Subscribed YouTubers and Channels*. Brandwatch. Retrieved 4 May 2020, from https://www.brandwatch.com/blog/most-subscribed-youtubers-channels/.

but also its digital position as well as where key information or attributes need to be positioned within content. Hereby the right location can help to make customers find your product more easily as well as highlight prestige (Pracejus, O'Guinn & Olsen, 2013).

Due to all those effects on the consumer a marketer also needs the tools and capabilities and not just the knowledge to utilize the benefits of design[73]. Although companies could hire design professionals, it is not cost efficient for smaller companies to employ both a designer and a marketer. Especially for minor design changes it is highly useful if the marketer is able to do them. To achieve that a marketer should be proficient in some of the major design tools available on the market. For not only creating but also collaborating with other marketers and visual artists. Design software, important for marketers, can be divided into:

- Image Creation Tools
- Video Creation Tools
- Animation Tools
- Infographic Creation Tools
- Screen Capture Tools
- Meme Creation Tools
- GIF Creation Tools
- Presentation Creation Tools[74]

All these tools types of tools are important; because *video is getting increasingly important* online, because content with images *generates more ROI* than content without and because visual content helps to *retain customers*. [75]

There is free as well as paid software available. The Adobe Creative Cloud with Adobe Illustrator, Photoshop, XD,[76] Premiere and Lightroom are among the most important paid tools for digital visuals. Despite this content creators are starting to avoid Adobe because of the

[73] Kane, G., & Pear, A. (2016). *The Rise of Visual Content Online*. MIT Sloan Management Review. Retrieved 4 May 2020, from https://sloanreview.mit.edu/article/the-rise-of-visual-content-online/.
[74] Hall, S. (2019). *51 Free Visual Content Creation Tools To Make Marketing Easy*. OptinMonster. Retrieved 5 May 2020, from https://optinmonster.com/best-visual-content-creation-tools/.
[75] Hall, S. (2019). *51 Free Visual Content Creation Tools To Make Marketing Easy*. OptinMonster. Retrieved 5 May 2020, from https://optinmonster.com/best-visual-content-creation-tools/.
[76] Kononenko, K. (2019). *35 Marketers Share Their Favorite Marketing Design Software*. Databox. Retrieved 5 May 2020, from https://databox.com/design-tools-for-marketing.

relatively high monthly fee the user has to pay per license[77]. To face this problem a lot of creatives are moving towards Affinity Studio, DaVinci resolve and other tools.

Looking at the importance of design and the according standard tools which are used, it becomes obvious how important it is to teach marketers not only about marketing, but also how to use the tools that create the marketing content.

[77] Dev Ed. (2019). *Why I Don't Use Adobe Creative Cloud Anymore*[Video]. Retrieved 5 May 2020, from https://www.youtube.com/watch?v=J7sVJChzMOQ.

2.3.5. Reporting

Reporting is the last but not less important aspect of digital marketing. It "is the process of measuring progress, showing value, and identifying actionable steps to improve marketing performance and meet your goals" [78]. A marketing report therefore is built out of all the different marketing metrics that have been defined before and can be derived from a multitude of marketing channels, e.g. social media platforms, SEO and analytics[79]. In contrast to analytics the reporting focuses more on the inside of the marketing researching being communicated to the rest of the company. Hereby presenting the deliverables of a marketeer [80]. The better the analysis and the reporting the better a company can act upon. Furthermore, marketing reporting does not only deliver what has been done but how it has been done. Hence giving a measure of how well each and every marketing attempt does and where there is improvement potential granting for a bigger audience and ultimately more sales [81].

Having established the importance of reporting, two questions arise. When to make a marketing report and what should this marketing report contain.

A marketing report should reflect the need for information of the intended reader. Therefore, the higher a marketing report goes in a company's hierarchy, the more important it is to cut down all unnecessary things. Meaning top managers are more interested in results than the process behind it. The upper management does not require a in depth analysis on a monthly basis, providing a more in-depth report on a quarterly basis for example is highly recommended[82]. On the other side members of your immediate marketing team might need more information on how a certain campaign performed in order to improve the same [83] [84].

Content-wise it also depends again, for whom the report is intended for. Higher ups hereby usually require less information but therefore are more interested about the effectiveness and efficiency of the marketing efforts. While people directly involved are also interested in how

[78] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.
[79] *7 marketing report templates every digital marketer needs | DashThis*. Dashthis.com. Retrieved 27 April 2020, from https://dashthis.com/blog/7-marketing-report-templates-every-digital-marketer-needs/.
[80] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.
[81] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.
[82] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.
[83] *7 marketing report templates every digital marketer needs | DashThis*. Dashthis.com. Retrieved 27 April 2020, from https://dashthis.com/blog/7-marketing-report-templates-every-digital-marketer-needs/.
[84] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.

and why something did not work [85] [86]. The base of any good marketing report should be a marketing dashboard. This marketing dashboard should consist out of a mix of pictures and graphs and with text descriptions for clarifications. This dashboard is then used to provide the content for the report itself. The report should show a clear purpose only contain critical information needed. Pictures and graphs are more explanatory than a ton of raw data. Finally, the report should be easy to understand for everyone, also those that are not proficient in the topic[87].

Seeing what, why, how and when to make a marketing report, one should see the similarities between marketing and research. As in the end marketing is research about one's target group. Therefore, reporting as well as the data gathering should be seen as a necessary skill for both practitioners and academics. For that one can either use one of the multitude of tools provided on the market [88] [89] or can create them one's self via processing data via excel or any other backend programming.

[85] Ford, E. (2019). *Marketing reporting: the ultimate guide for digital marketers including dashboards, templates, tools & software*. Supermetrics. Retrieved 27 April 2020, from https://supermetrics.com/blog/marketing-reporting.
[86] *7 marketing report templates every digital marketer needs | DashThis*. Dashthis.com. Retrieved 27 April 2020, from https://dashthis.com/blog/7-marketing-report-templates-every-digital-marketer-needs/.
[87] Vidal, B. (2019). *What Should a Digital Marketing Report Contain?*. Wearemarketing.com. Retrieved 27 April 2020, from https://www.wearemarketing.com/blog/digital-marketing-reporting-essentials.html.
[88] Oetting, J. (2017). *9 Client Reporting Tools That Will Save Your Agency Time*. Blog.hubspot.com. Retrieved 27 April 2020, from https://blog.hubspot.com/marketing/client-reporting-tools-that-will-save-your-agency-time.
[89] Simsek, Y. (2020). *Best Reporting Tools for Digital Marketers in 2020*. Digital Agency Network. Retrieved 27 April 2020, from https://digitalagencynetwork.com/best-reporting-tools-for-digital-marketers-how-to-choose-the-best-option-for-your-project/.

2.3.6. Summary of necessary marketing knowledge, skills and attitudes

This section summarizes the findings and the implications of the chapters above. Each of the digital marketing domains represents a different field of study. Accordingly, the knowledge base, attitude and skills required by a marketer are accordingly widely spread. This phenomenon was discovered by Royle and Laing (2014). Despite their elaborated work, we suggest that it lacks in some of the domains of digital marketing as defined above. Furthermore, we want to add more substance to the model by combining our domains with the KSA model. This provides the study with the framework (see Table 3) to evaluate whether or not the digital marketing/ marketing curriculum fulfill the requirements for marketers on the market.

The attitudes are hereby the hardest to display within our frame, as attitudes tend to overlap different domains. Thus, making it hard to clearly assign them to the domains.

Table 3: Digital marketing KSA matrix

	Knowledge	*Skills*	*Attitude*
Backend programming	• Coding principles	Analytical programming • Python • R • SQL Web site building • HTML • CSS • Java script	• Analytical thinking • Being critical • Preciseness
Analytics/research	• Governmental rules and regulations • Characteristics of data (5V) • Database knowledge • Database design principles (FAIR) • Data management • Origin of data • Marketing metrics	Analytical Tools • Excel • R Social media Analytic tools • Facebook analytics • Instagram analytics • TikTok • Snapchat • Google Analytics	• Analytical thinking • Being critical • Preciseness
Reporting	• Formatting rules • Citations guidelines • Aesthetics guidelines	Language writing skills Collaborative Tools • Slack • Google Drive • Gogle Hnagouts • Zoom • Skype/ Business Skype • Trello	• Convincing/ clearly understandable writing • Eye for aesthetics • Preciseness
Content management	Communication science theories • 7 Principles of Influence by Cialdini Marketing mix • 4/7p • 4s web marketing model Type of marketing • B2B • B2C	Applying knowledge gained from analytics Tools to post • Later.com • WordPress • Monday.com • Shopify • WooCommerce • Hootsuite • Google Ads	• Empathy • Preciseness • Creative • Analytical thinking • Creative • Innovative

	• C2C Customer Journey	• Facebook Advertisement	
Design and impact	Design impact principles • Design principles • Marketing mix • Customer psychology theories • Color impacts • See Table 13 and Table 14 Technical • Tools for every purpose • Paid and unpaid options	Image creation tools • Adobe Photoshop • Affinity Photo Video creation tools • Final cut • Adobe Premiere • Davinci Animation tools • Motion • After Effects • Snapchat/IG Filters • Spark AR studio Infographic creation tools • PowerPoint Screen capture tools • Adobe Captivate • VideoProc Meme Creation tools →often same as image creation tools Gif tools • Photoshop • Wondershare Filmora9 • Filmora Meme Generator Presentation • PowerPoint • Google Slides • Keynote Text editors • Word	• Innovative • Creative • Communications skills
Overlapping attitudes			*Willingness to learn* *Entrepreneurial spirit* *Multi-tasking* *Positive mindset* *Power to influence* *Comfort with technology*

Despite the aim for this Table 3 to be as complete as possible the number of tools a marketer should be skilled in, are plentiful. Therefore, this list presents the most important, most commonly used tools for marketers. This way the list provides the base for a comparison between what is required in praxis and what is taught at universities.

2.4. Teaching/ learning types

"The international business training students receive, often lacks this real-world complexity" claim Rau, Griffith and Dieguez (2019). According to an article from the guardian by Hirst

(2017) [90] universities struggle to provide the job market with students that have career-oriented work experience. Despite the fact that university should provide you with the life skills and the training to be a productive worker for the labor market. Universities today are impacted by consumer-based powers such as demand, networking, information and crowed-based power (Labrecque, vor dem Esche, Mathwick, Novak & Hofacker, 2013). This means that universities do not only have to react on these powers from a managerial point of view but also need to educate students about these. This means that universities cannot keep striving for more and more research. Instead they need to comply with the need of the market and the power of the consumers, demanding next to research and the resulting knowledge, also for practical skills that can be applied in the industry. Hence it is important to evaluate the problem at hand from a teaching/ learning /education point of view. This will be done based on the education framework by Heimann, Otto & Schulz, 1969 as cited by Duit (2007). This chapter will follow the components presented by Duit (2007) with the additional component of limitations of the teaching, shown in Table 4: Revision of the model of Duit (2007) Table 4.

Table 4: Revision of the model of Duit (2007)

Intentions (Aims and objectives)	**Topic of instruction** (content)	**Methods/Models** (of instruction)	**Media** (used in instructions)	**Limitations** of teaching
Why	What	How	By what	What not

2.4.1. Intention of academical digital marketing teaching

This research/teaching/knowledge gap has been accredited by many authors (Bennis & O'Toole, 2005; Mintzberg, 2004; Pfeffer & Fong, 2002; Rynes, 2007; Rynes, Bartunek, & Daft, 2001; Rynes, Giluk, & Brown, 2007).

This claim is even strengthened by some authors (Billsberry, 2014; Clayson et al., 2006; Offstein & Chory, 2016) as they state that institutions of higher education are under constant financial, governmental and societal pressure tempting them in calculated, dishonest and less innovative teaching. Hence the basic connections between teaching, research and practice are interrupted. This three-way deadlock has been evaluated by the authors Burke and Rau (2010) when they describe what research has been done for each of the connections, see Figure 3.

[90] Hirst, T. (2007). What's the point of university?. Retrieved 10 March 2020, from https://www.theguardian.com/commentisfree/2007/jul/27/whatsthepointofuniversity

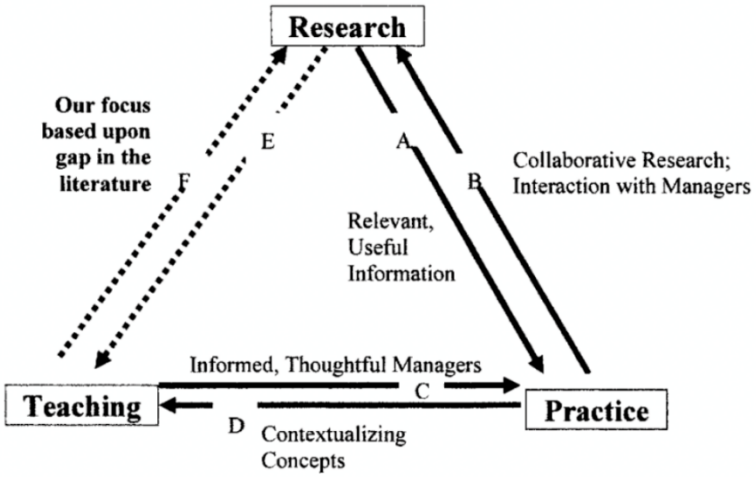

Figure 3: Management literature gap obtained from Burke and Rau (2010)

The model by Burke and Rauch (2010) combines teaching, research and practice within one framework. This framework is important for this study as it will help to explain the knowledge gap between research teaching and practice.

For the connection from research to practice recent literature (Rynes, 2007; Rynes et al., 2001; Rynes et al., 2007) concentrates on the delivery of research knowledge to relevant practitioners and how it can be made more relevant, accessible and understandable (Burke & Rauch, 2010). The reverse direction concentrates about how practitioners can be more efficiently involved in the research process and how researchers can be more practically involved and practically skilled (Bartunek, 2007; Bennis & O'Toole, 2005; Hinkin, Holtom, & Klag, 2007; Oviatt & Miller, 1989).

The connection between teaching and practice, describes how to educate practitioners to be informed and effective managers (Burke & Rauch, 2010), and how practitioners can influence the teaching methods to make the learning more practical (Vroom, 2007).

The last connection between teaching and research concentrates on how research can facilitate better teaching and how teaching can achieve better research.

According to Markides (2007), "If you have communicated some of your research findings to your students, then by definition you are doing managerial relevant research". Despite this and

other claims about research's usefulness for teaching [91] [92] among them, Marsh and Hattie (2002) state that there is no positive relation between research and teaching quality. They hereby refer to a previous study (Hattie & Marsh, 1996) in which the evaluated the phenomenon based on 498 correlations out of 58 articles This challenges the academical system itself and the connection between teaching, research and practice. Therefore, the intention here is to understand this connection and apply this knowledge to the topic of digital marketing.

2.4.2. Topic of teaching

The three factors presented in the chapter above, namely practice, research and teaching all influencing each other. Hence, when teaching digital marketers, research and practice should both be considered. A model (Figure 4) by Royle and Laing (2014) provides this study with feasible outline on what to teach a digital marketer. It centers research as one of the core capabilities but also diversifies the skills of a digital marketer towards technical skills on the one side and on the other side business management knowledge. Thus, providing a teaching model that is relevant for the practice, promotes a holistic marketing teaching and relevant research connecting practice and teaching.

[91] SAGE Publications Ltd. *What are the benefits of educational research for teachers?*. SAGE Publications Ltd. Retrieved 31 March 2020, from https://uk.sagepub.com/en-gb/eur/what-are-the-benefits-of-educational-research-for-teachers.
[92] Patsko, L. (2015). *What is teacher research, and how can you benefit from it?*. World of Better Learning | Cambridge University Press. Retrieved 31 March 2020, from https://www.cambridge.org/elt/blog/2015/03/16/teacher-research-can-benefit/.

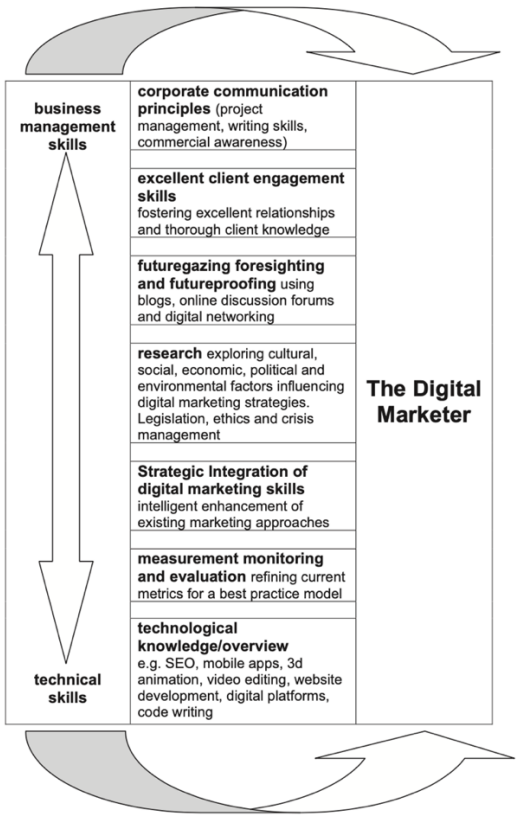

Figure 4: The digital marketer retrieved from Royle and Laing (2014)

Of especial interest is the wide variety of skills that are presented here as being important for a digital marketer. Therefore, it is important to create an integrated teaching approach that fills all those areas. Before proceeding to more in depth learning models, knowledge, skills and abilities[93]/attitude (KSA) (Kraiger, Ford & Salas, 1993) should be defined. Defining these will not only foster understanding of the models but also help to investigate the type of gap existing within academical marketing teaching. Knowledge is the embodiment of all the information one has of a certain topic, this can be for example be aware of regulations, conventions or certain people to contact. Skills are the ability of being able to handle certain situation with or without tools. In contrast to knowledge skills are of a practical nature and therefore will improve over time while knowledge is either there or not [94] [95] [96].

[93] Indeed.com. (2020). *Knowledge, Skills and Abilities (KSA): Definitions and Examples | Indeed.com*. Indeed.com. Retrieved 31 March 2020, from https://www.indeed.com/career-advice/career-development/knowledge-skills-and-abilities.
[94] Indeed.com. (2020). *Knowledge, Skills and Abilities (KSA): Definitions and Examples | Indeed.com*. Indeed.com. Retrieved 31 March 2020, from https://www.indeed.com/career-advice/career-development/knowledge-skills-and-abilities.
[95] Staff Squared. (2015). *The Difference Between Knowledge, Skills and Abilities | Staff Squared*. Staff Squared. Retrieved 31 March 2020, from https://www.staffsquared.com/blog/the-difference-between-knowledge-skills-and-abilities/.
[96] The Balance Careers. (2019). *KSA: How to Use the Knowledge, Skills and Abilities Model*. The Balance Careers. Retrieved 31 March 2020, from https://www.thebalancecareers.com/understanding-knowledge-skills-and-abilities-ksa-2275329.

Ability in contrast to the other two, refer to the natural given capabilities of a person and not to something that can easily be studied [97]. Kraiger, Ford & Salas (1993) refer to the A in KSA as attitude, which correlates goal setting, motivation and self – efficiency. As the definition of abilities and attitude refer to the same, we consider them also as one.

2.4.3. Learning models

Learning becomes increasingly important in today's life due to the ever-rising qualification hurdles associated with the technical advance (Spitz-Oener, 2006). Hereby one has to divide between real and formal qualifications. Real qualifications are those skills one possesses to perform a job in a certain company, whereas formal qualifications are degrees or certificates claiming being someone (Green & Zhu, 2010). To facilitate the rising amount of qualifications needed two learning models and ample learning tools can be used. According to the classification by Otto & Schulz, 1969 as cited by Duit (2007) this chapter is concentrating on the two learning models; the traditional academical teaching (TAT) and the experimental teaching theory (ELT). The TAT hereby helps to reduce teaching costs and makes it possible to educate a huge number of students simultaneously. The ELT in contrast helps focusing on a more specialized and individualized teaching method, allowing the learners to create their knowledge through learning experiences (Kolb, 2015, p. 6). Through those learning experiences the ELT allows for a multitude of benefits;

- accelerated learning,
- bridges theory/practice gap,
- increased engagement levels
- personalized learning [98] [99] [100].

Although, the traditional approach has been more cost effective one needs to consider the rising amount of teaching tools, especially those that are digital. This is because once a digital course has been set up it requires little work of the teacher to redo as long research or technological advance does not prove the content obsolete. On the one side this facilitates cheaper TAT. On the other side allows for better ELT as teacher can concentrate to create more differentiated content for their students. In terms of digital teaching, special content can be taught by the best

[97] The Balance Careers. (2019). *KSA: How to Use the Knowledge, Skills and Abilities Model*. The Balance Careers. Retrieved 31 March 2020, from https://www.thebalancecareers.com/understanding-knowledge-skills-and-abilities-ksa-2275329.
[98] Kydon Holdings. (2014). *8 Reasons Why Experiential Learning Is The Future Of Learning - eLearning Industry*. eLearning Industry. Retrieved 9 April 2020, from https://elearningindustry.com/8-reasons-experiential-learning-future-learning.
[99] Stuart, H. *Why is experiential learning important?*. Easchooltours.com. Retrieved 9 April 2020, from https://www.easchooltours.com/blog/experiential-learning-learn-through-experience.
[100] Levitt, A. *The importance of experiential education - EF Academy Blog*. EF Blog. Retrieved 9 April 2020, from https://www.ef.com/wwen/blog/efacademyblog/importance-experiential-education/.

respective experts and teachers of the field as far as the skills and knowledge allow for. Thus, giving each and every one easier access to the best teachers. Furthermore, it needs to be mentioned that this is only a part of the process of ELT, the acquisition of knowledge, which is then followed by the specialization and integration towards wisdom, creativity and integrity (Kolb, 2015, p. 240). This theoretical superiority of ELT over TAT has also been found out by Burch et al (2019). In their study, ELT students scoring about half a standard deviation higher than their counter part and overall the students experienced a better learning outcome (Burch et al, 2019).

2.4.3.1 Experimental learning theory

Due to the number of sources suggesting that ELT is the superior learning model, this part will give more information why one should consider ELT, what it is, and what the benefits are.

The roots of ELT can be traced back to the Asian Confucian and Taoist spiritual traditions (Trinh & Kolb, 2015) but also be found at classical philosophers like Aristoteles, Mill and Lock (Andresen, Boud & Cohen, 2000). In the more recent history Mary Parker Follet and John Dewey can be considered as the forerunners of ELT, followed by many other authors such as Kurt Lewin, Jean Piaget, William James, Carl Rogers, Paulo Freire, Lev Vygotsky and Carl Jung (Kolb, 2015, p.6, 19). Based on the number of authors, several streams and applications of ELT emerged, see Table 5. Accordingly, to get the most of ELT one needs to diversify one's experiences.

Table 5: Streams and applications of the ELT derived from Kolb (2015, p.18)

Social policy and action	**Competence based education**	**Lifelong learning and career development**	**Experimental education**	**Curriculum development**
Access and influence on the symbolic/ technological culture for: • Minorities • The poor • Blue-collar workers • Women • Developing countries • The arts	• Assessment of prior learning • Assessment centers • Competence centered curricula	• The non-university education industry • Adult development programs in higher education • Integration of learning and work	• Co-op education • Internships • Simulations • Experimental exercises • On-the-job training/learning	• Implementation of Brunner's manifesto: "Any subject can be respectably taught at any level"

Despite the multitude of applications, as presented in the figure above, all can be identified by;

- Involvement of the ***whole person***,
- ***Prior experience:*** the recognition of learners pervious KSAs and the active use of it,
- ***Reflection of experiences*** and the continued learning progress of old and new KSA

- ***Structure of experience:*** Intentional, structured vs unintentional, unstructured design of learning
- ***Facilitated*** by another person (teacher) or not
- ***Assessment*** by whom, how and why? (Andresen, Boud & Cohen, 2000)

Most recent authorities on the field of experimental learning are Bloom and Kolb, with their respective theories, Bloom's taxonomy and Kolb's learning cycle. The easiest way to distinguish those two approaches is by looking how they differ. Bloom describes a linear learning process with its levels assumed to be accumulative, hence only when a previous level is achieved a learner can progress to the next one efficiently[101] (Schatzberg, 2002).
Kolb in contrast presents learning as a cycle in which each new experience has an impact on the next experience and thus does not rely on another precondition to be met[102] (Schatzberg, 2002).

2.4.3.2 Kolb's learning cycle

Kolb's learning cycle shows how experiences translate through internal reflection in concepts [103] (Schatzberg, 2002). By calling it a learning cycle the author hereby refers to it as a never-ending process (Kolb, 2015, p.61). This also reflects the human life, with each new experience learning continuous. In contrast to Bloom, Kolb's model does not display any hierarchal levels therefore suggesting, that no experience and no KSA is better than another. Just different, fitting to different situation. The phases that Kolb (1984, as cited by Henríquez Parodi, & Alon, 2019) names for his learning cycle are concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE).

- Concrete Experience: In the CE phase the learner encounters a distinctive new experience or one that triggers a focus shift of a previous experiences.

[101] homeworkmarket.com. Jeopardy Game. Retrieved 11 April 2020, from https://www.homeworkmarket.com/sites/default/files/priorlearning-experientialtheory.pdf.
[102] homeworkmarket.com. Jeopardy Game. Retrieved 11 April 2020, from https://www.homeworkmarket.com/sites/default/files/priorlearning-experientialtheory.pdf.
[103] Accipio Ltd. *Kolb's Learning Styles: experiential learning theory – BusinessBalls.com*. Businessballs.com. Retrieved 14 April 2020, from https://www.businessballs.com/self-awareness/kolbs-learning-styles/.

- Reflective observation: The RO phase is defined by reflecting on the experiences one has personally made
- Abstract conceptualization: AC defines the learning phase in which the learner creates or modifies ideas based on the reflective observation.
- Active experimentation: Within the last stage, the learner acts upon the inside of the previous stages and applies them to his/her learning environment, where he/she see if whether those modification made an impact (Kolb, 2015).

These four phases can be translated into two dimensions, which correlate to the ones proposed by Piaget's learning theory (1970, as cited by Kolb, 2015, p. 76). Experience and abstract conceptualization represent the dimension of interiorized imitation, and experimentation and reflective observation form dimension of external transformation (Kolb, 2015, p. 67), see Figure 5.

Based on these dimensions, Kolb establishes four learning styles; diverging assimilating, converging and accommodating.

- Diverging (CE/RO): Divergent learners rely on feeling and watching when they learn. Hence these learners are best in viewing specific situation from various viewpoints. Furthermore, these learners appreciate working in groups, getting personal feedback and listening with an open mind.
- Assimilating (AC/RO): Assimilating learners prefer a logical and concise learning approach. They favor a theoretically sound approach over practical value based on their formal learning style, which includes lectures, readings, and exploring analytical models.
- Converging (AC/AE): Converging learners are learners that enjoy solving practical problems. These learners are rather drawn to technical tasks and problems than to interpersonal and social problems.
- Accommodating (CE/AE): This type of learner relies on intuition over logic. They take other people's inside and apply them directly in practice; hence they rely more on other people for their analysis. They like to work in teams and actively try out different approach to reach success.

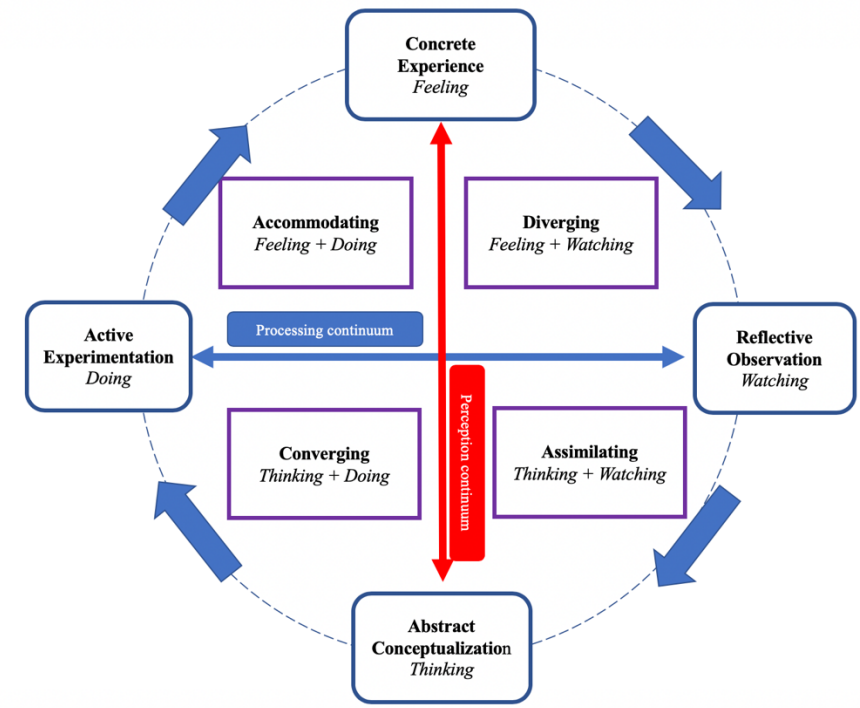

Figure 5: Learning Cycle as described by Kolb

2.4.3.3 Bloom's taxonomy

Bloom's taxonomy is separated in three domains, which align with the KSA model by Kraiger, Ford and Salas (1993). The cognitive domain is based on knowledge, hence mental skills, the affective on attitude such as feelings and emotions and the psychomotor on the manual and physical skills [104]. Although in general Bloom's taxonomy is referred to as one sequential ladder, each of the domain's has its own one.

The cognitive domain (knowledge-based)

The cognitive domain of Bloom's taxonomy concerns itself with the intellectual skills of an individual. It includes memorizing specific facts, concepts and patterns as a foundation for deeper learning [105]. The original categories were knowledge, comprehension, application, analysis, synthesis and evaluation and shifted in 2001 to remember, understand, apply, analyze, evaluate and create [106] see Table 6, hereby shifting the focus from static to fluent learning [107]. Furthermore, by changing the last to categories the focus of the taxonomy shifted from

[104] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[105] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[106] Persaud, C. (2018). *Bloom's Taxonomy | The Ultimate Guide To Bloom's | Top Hat*. Top Hat. Retrieved 13 April 2020, from https://tophat.com/blog/blooms-taxonomy-ultimate-guide/.
[107] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.

analyzing towards creating. As earlier mentioned, the categories in Bloom's taxonomy are in contrast to the elements in Kolb's learning cycle meant to be sequential. That means that the categories built up on each other and therefore are levels of difficulty [108].

Table 6: Bloom's cognitive domain ladder

Level	Explanation
Remember	Being able to memories facts/ terms/ basic concepts
Understand	Understanding ideas/ concepts/ facts and being able to able to work with them, e.g. organizing, characterizing, translating, interpreting, giving descriptions, comparing
Apply	Solving problems and difficult new situations with the newly/previously acquired and understood knowledge
Analyze	Understanding the applied knowledge on a deeper level by examining and categorizing information, how it combines, what it causes, how it interferes and finding evidence for generalization of the information
Evaluate	Making sophisticated judgment in terms of internal evidence and external criteria
Create	Being able to build a construct from diverse sources, including a plan, set of abstract relations, or unique communication strategies

The affective domain (emotion-based)

The affective domain concerns itself with the growth of abilities, emotions and feelings. A special focus hereby is put on the emotional control and knowledge of one's selves and the sensing of other abilities [109] [110]. To measure this growth, Bloom's taxonomy for the affective domain describes five levels [111], see Table 7 7.

[108] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[109] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[110] Persaud, C. (2018). *Bloom's Taxonomy | The Ultimate Guide To Bloom's | Top Hat*. Top Hat. Retrieved 13 April 2020, from https://tophat.com/blog/blooms-taxonomy-ultimate-guide/.
[111] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.

Table 7: Bloom's affective domain ladder

Level	Explanation
Receiving	Learner passively pays attention, minimum requirement for learning
Responding	Active participation in learning process
Valuing	Seeing value within the acquiring knowledge
Organizing	Aligning learning with learner's philosophy
Characterizing	Creating abstract knowledge

The psychomotor domain (action-based)

The last of Bloom's domains concerns itself with the physical skills of an individual. They describe the skill level to physically craft something with or without the help of tools or instruments. The psychomotor domain mainly concentrates on the change and/ or the development of skills and/ or behaviors. Despite Bloom not creating any categories for the psychomotor domain other authors did so Simpson (1972) described the levels [112] [113], shown in Table 8

Table 8:Simpson's cognitive domain ladder based on Blooms taxonomy

Perception	Combining sensing with motor activity
Set	Referring to the mindset of the student, including mental, emotional and physical condition, closely linked to responding from affective domain
Guided Response	Limitation and trial and error within the first stages of learning, adequate performance can be reached by practicing
Mechanism	Learning complex tasks, previous learned habits and movements can be performed with a certain confidence and proficiency
Complex overt response	• Quick, not overthinking, accurate, non-hesitant and highly coordinated performance, requiring a minimum of energy • Knowing every phase of the performance and therefore being able to recognize success within every stage of the performance
Adaption	Individual possess well-developed skills, that can be changed/ modified to fit special requirements
Origination	Exploring new ways how skills can be utilized hereby not only fitting skills to a certain situation but creatively exploring new ones

[112] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[113] Persaud, C. (2018). *Bloom's Taxonomy | The Ultimate Guide To Bloom's | Top Hat*. Top Hat. Retrieved 13 April 2020, from https://tophat.com/blog/blooms-taxonomy-ultimate-guide/.

2.4.3.4 Bloom and Kolb – non-mutual exclusive learning theories

Despite being quite similar and seemingly presenting an exclusive model, both theories are complementary. Kolb hereby presents the most-purest form of how is being learned and Bloom in contrast gives more a hierarchal level of what is learned and how it resonates with the cognitive level of a person. Meaning while Kolb's theory concentrates on lifelong learning, Bloom classifies the "learning cycle" of a specific element. Hence makes it easier for educators to measure students and classify their teaching content. By doing so, one eliminates the often-raised critics about Bloom's taxonomy that lower levels of the hierarchy are unworthy of teaching (Flannery, 2007)[114]. This is done by structuring the teaching with one level of Bloom with the learning cycle of Kolb. As Kolb (2015, p.10) states: "Learning is best facilitated in an environment where there is dialectic tension and conflict between immediate, concrete experience and analytic detachment." This means also the focus of the teaching will be on one level of blooms, within each stage elements, of each other level, are encouraged to be included as well.

Furthermore, to make those two theories complementary one needs correct the assumption that one only can progress in one way, take for example the company Kodak. Once, one of the biggest companies within the photography business completely failed to realize the rinsing of threat of digital photography [115]. Despite their profound expertise in analog photography they did not fully recognize their limitations towards digital photography. Hence, they stopped learning and proceeding in going forward. In terms of Blooms taxonomy, one could say they dropped down within the hierarchy from creating to only understanding their business.

That raises the questions where all the knowledge went to? Hereby the term obsolete knowledge comes handy. It says that knowledge might have been accurate and true at the point of time and under the circumstances the knowledge has been studied but has become invalid. This means for Blooms model should rather be seen as a Lego construct where each stone supports the next one. Pull one out and the whole construct becomes unstable. This also means that, to prevent this construct collapsing from increasing outer pressure, one needs to enlarge one's base as

[114] Lawler, S. (2016). *Identification of animals and plants is an essential skill set*. The Conversation. Retrieved 12 April 2020, from https://web.archive.org/web/20161117044125/http://theconversation.com/identification-of-animals-and-plants-is-an-essential-skill-set-55450.
[115] Mui, C. (2012). *How Kodak Failed*. Forbes. Retrieved 15 April 2020, from https://www.forbes.com/sites/chunkamui/2012/01/18/how-kodak-failed/.

well. Taking this Lego stone symbolic also helps us to understand that some knowledge can also be cannibalized to be used somewhere else as a previous experience, see Kolb. But also, as any other toys parts get lost over time, emphasizing the human's capability to hold knowledge.

The last point why Blooms and Kolb work together is because of Bloom separating learning in three domains. Thus, leaving out how these different domains interact with each other. Taking Kolb this is explained because different types of learning experiences complement each other.

2.4.4. Learning approaches and tools

Learning models have been discussed in the last chapter; providing a rough overview how learning works in theory. In this chapter the theory will be put into application, therefore learning approaches and learning tools will be discussed. This study defines learning approaches as a group of different learning tools blended together to reach learning goals. Thus, tools are a single method teaching something. Despite this clear definition learning tools and approaches are not always clearly separable e.g. a team assignment itself is a tool which is composed out of the two tools teamwork and doing an assignment. Hereby some tools might only cover one phase of Kolb's learning cycle while others cover more. This mechanism has also been investigated by Kurthakoti and Good (2019) as they tested different experimental learning approaches. According to them the most common approaches are case studies (Becker & Watts, 1994), games (Hemenway, Moore, & Whitney, 1987; Kurthakoti & Good, 2019; Joseph & Saunders, 1970; Sulock,1990) and simulations(Halstead, 1989; Hester, 1991; Kurthakoti & Good, 2019; Yoho, 1989), group projects, internship and service learning, study abroad and field trips (Kurthakoti & Good, 2019, for more detailed info see appendix, Table 15). Crouch et al. (2004) proposes to use laboratories (Bartlett & King, 1990), experimental economies (Leuthold, 1993), showing how something works figuratively, writing assignments (Hansen, 1993), and cooperative learning (Maier and Keenan, 1994). Crouch et al. (2004) illustrates even more basic teaching tools consisting only out of passively observing lectures, observing experiments, predicting experiments and discussions. Also, the tools were not tested against each other directly, the paper by Crouch et al. (2004) finds evidence that a multitude of different tools and a more active than passive approach enhance the learning experience. This again aligns with Kolb's theory that different experiences foster learning progress. This also aligns with the earlier study of Becker & Watts (1994) in which they claim that the learning outcome depends on how the teacher presents it, which should be active according Crouch et

al. (2004). When it comes to the variety of teaching tools technology as a medium plays an important role. This can be seen in paper from Martinez (2004) in which they basically divided teaching tools into 3 categories, analog, digital and online learning tools. Especially with the increase in bandwidth and communication technologies they assume that online learning tools will become more popular. As of today, this can already be seen in a variety of tools such as Udemi, Skillshare, Skill Success, Coggno[116].

Despite grasping a lot of the important factors such as outcome and how to evaluate it (Kurthakoti & Good, 2019), the authors are still missing out on modern teaching tools. Hence, they are missing out the concrete connection between the teaching subject and the approaches. This is also, where this study comes in play, identifying important topics and skills for digital marketing and combining them with the most suitable teaching and learning tools and approaches.

2.4.5. Limitations of the teaching approaches

This part of the study serves the purpose of educating about the limitations associated to teaching and teaching of digital marketing. Understanding these limitations is important as only when these are understood, one can find a solution that helps to overcome. Hence then it will be possible to overcome them.

- nature of the teaching, such as complexity, temporariness, multitude of skills/knowledge taught (Burke & Rau, 2010; Kickham-Samy, 2013)
- individual characteristics of students, such as experience, prior KSA, role expectations (Burke & Rau, 2010)
- individual characteristics of teachers, such as experience, prior KSA, role expectations (Wolters & Daugherty, 2007)
- institution characteristics, as strategic management and planning, company culture and resource allocation (Burke & Rau, 2010)
- culture of teaching, value of research vs value of teaching (Burke & Rau, 2010, Schaller, 2018, Kolb, 2015, p.13-14)
    - possible free riding? (Kolb, 2015, p.13-14)

[116] Tom @Teachinguide Blog. (2019). *Online Learning Platforms – 5 Marketplace Comparisons - Blog | TeachinGuide*. Blog | TeachinGuide. Retrieved 18 April 2020, from https://blog.teachinguide.com/online-learning-platforms/.

- societal culture that determine the expectations of higher education (Burke & Rau, 2010)
- problem of how to assess learning, either to narrow or to wide

2.4.6. Summary implications of teaching methods

This chapter provided a multitude of information and inside about the teaching environment at universities, optimal course structure, components of a digital marketing curriculum, the optimal teaching methods in form of experimental learning, learning methods that can be utilized by teachers to keep their course diversified and at last the limitations that are inherent to teaching and learning.

When looking into the teaching environment of universities a fundamental problem could be identified. The problem is that teachers in university teaching face 3 main tasks, teaching, practice and research (Burke & Rau, 2010). At first glimpse only having three tasks might not sound challenging at all but considering the differing nature of these three it becomes a problem. As one can only look one direction at a time, teachers also cannot do all three tasks at the same time. Therefore, when a teacher has a research focus his teaching focus, accordingly, will be towards what he researched and about his research methodology, as these were the things he concentrated upon. Naturally there are also teachers that will focus on one of the other tasks but despite that it indicates a university problem when it comes to teaching.

To investigate the phenomenon, it was important to find and/or to create evaluation tools. At first, the general course structure was looked upon. Therefore Duit (2007) provided the fitting conceptual tool. Based on this tool a course should be built up based on an intention, topic of instruction, methods/ models used, and the media used to communicate it. The framework, this model creates, therefore can be used to analyze university teaching and what teachers emphasize.

The components that teachers should include in their digital marketing curriculum is another essential part of this study. It is important as it gives an overall scope of what scientists think should be included within the digital marketing curriculum. Hence in this part we showed the most promising model proposed by authors doing similar studies. Despite having a separate chapter for similar studies this is valuable to have the model of Royle and Laing (2014) here as it synergizes the teaching component with the topic component.

The next part was about what teaching styles promise the best outcome in terms of learning experience. Hereby the ELT was named as the most important theory of this generation in terms of learning success. In this context this separation of skills, knowledge and attitudes has been elaborated. This is important as each of the KSA requires for different learning environments. Hence the ELT proposes that in order to grow the KSA, one needs to undergo different types of learning experiences. Thus, changing up teaching methods between theoretical and practical and between theorizing and proving will provide the most beneficial outcomes in terms of learning.

Following the part about the ELT teaching approaches and methods are described in order to give an indication of the possibilities out there to utilize teaching students at universities. Thus, providing some beneficial information for the universities directly deriving from literature.

The last point discussed in the chapter where the limitation of teaching themselves. This has been done to emphasize the overly complex structure of teaching and where potential shortcomings, the potential gap, might derive from.

2.5. Similar studies

After having shown what digital marketing is all about and what teaching methods there are this chapter shall concentrate on the research that has already combined both, as it is the goal of this study. This is important in order to reduce abundancy of work in the scientific community but also to confirm, challenge and improve current existing theory. Therefore, the studies relate to our study will be presented and their outcomes are evaluated. This type of summarizing will help the study with a guideline of what needs to be researched to make further contribution to the scientific community.

2.5.1. Di Gregorio, Maggioni, Mauri and Mazzucchelli (2019)

A study by Di Gregorio, Maggioni, Mauri and Mazzucchelli (2019) identifies five skill categories for employability, classifying 27 soft skills and capabilities:

- Basic soft skills
- Analytical skills
- Digital and technical skills
- Core marketing skills
- Customer insight skills

They state that soft skills and marketing knowledge are key skills but also recognize the importance of other new hard skills and capabilities accompanying new technologies, that marketers should study. Despite recognizing that there are in fact hard skills that marketers need to study, there contribution solely lies within the soft skills and marketing knowledge. Hence, resembling the higher levels of Blooms taxonomy, which likely represents the companies wishes. But by doing so this study completely ignores the basics that need to be taught in order to be able to obtain these later stages of the ladder.

2.5.2. Ghotbifar, Marjani, and Ramazani (2017)

Ghotbifar, Marjani, and Ramazani (2017) identified in their study, predominant skill gaps of employees in digital marketing. This study is important as the lack of skills, indicate the areas and skills the education system should target to improve in their curricula. Doing so will increase the overall satisfaction of employers, students. Thus, they will improve the reputation and usefulness rating of university courses. The indicated skill gaps are about project management, customer relationship skills, use of weblogs, online discussion forums, digital networks, data prediction, marketing tools for measuring progress within digital marketing, website development and digital operating systems (Ghotbifar, Marjani, & Ramazani, 2017).

Despite being an important study, it still lacks in specifics that can be used to enforce and measures, whether or not a specific university deals with this indicated gap or not.

2.5.3. The Hart Research Associates (2013)

The Hart Research Associates (2013) also investigates this skill gap. Their study is based on 5 studies "commissioned by AAC&U as part of its ongoing Liberal Education and America's Promise (LEAP) Initiative"[117]. The result of this study was that the industry requires broad learning and cross-cutting skills. The outcome of this study was that employers want employees with the ability to communicate clearly, think critically and solve complex problems over undergraduate major[118]. In addition, the study favored having an electronic portfolio to showcase a person's skills and knowledge. This last part is especially interesting for the study because as it is highlighting again the importance of actual skills over abstract skills for the job market. Despite indicating important issues, the study rather focused on attitudes rather that skills or knowledge that all play a part in educating marketing professionals.

2.5.4. Schlee and Karns (2017)

Schlee and Karns (2017) investigate the skills that marketers need in different salary levels. Their study was based on researching the characteristics posted on LinkedIn and Indeed, hence they could not take into account on what skills, knowledge and attitudes applicants were actually hired by the companies in the end.

Despite this fact there was a clear trend that the higher the job level, as indicated by annual income, the more technical skill were required by the applicants. Here the only outcast was MS-office skills being less required in higher paid jobs than lower once (Schlee & Karns, 2017). This can be explained by the fact that basic MS-Office skills are taught in school and therefore might be considered as base skills that do not need mentioning anymore. Also, that they higher jobs need more technical skills can be logically be explained. They higher you get into the management levels the more different people, departments you need to oversee thus in order to give valid commands to your employees, the manager needs to have a good insight how everything is working. On top of that the management needs to be proficient in tools that help

[117] Hart Research Associates. (2013). *It Takes More than a Major: Employer Priorities for College Learning and Student Success: Overview and Key Findings*. Association of American Colleges & Universities. Retrieved 20 April 2020, from https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary.
[118] Hart Research Associates. (2013). *It Takes More than a Major: Employer Priorities for College Learning and Student Success: Overview and Key Findings*. Association of American Colleges & Universities. Retrieved 20 April 2020, from https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary.

to evaluate their internal and external performance. Despite proving the need for hard skills for professionals the studies still lack in actionable recommendations to the teaching organs.

2.5.5. Lee (2019)

That business administration studies should include more technical skills has also been a topic for Lee (2019) as he points out that there has been a theoretical gap (Edelman et al., 2008; Solomon et al., 2002) between what students learn and what they need to actually in practice. Despite the fact that Lee (2019) specifically looked into the entrepreneurship domain of business administration, one can find plenty of similarities between his study and digital marketing. His topics within his study were among others user experience research and usability, prototyping and web development, digital marketing, including social media, online advertisements, and email campaigns, web traffic and data analytics (Lee, 2019). Therefore, despite having a focus on entrepreneurship this study provides valuable inside of what tools could also be used in digital marketing.

Furthermore, in his study Lee (2019) presents, that experimental teaching can lead to:

- "(1) increased confidence and engagement level within and outside the classroom;
- (2) development of entrepreneurial capabilities and digital proficiency; and
- (3) increased employability for internships and full-time career opportunities." (Lee, 2019)
-

Which implies that the gap between academical teaching and the practice of digital marketing is closing when teaching involves more practical skills.

2.5.6. Royle and Laing (2014)

Royle and Laing (2014) presents another useful study that examines the skills gap within the digital marketing industry. Hereby, they created a framework in which they define the areas in which a digital marketer needs to be educated. The framework thus was an inspiration for this studies framework due to its simplicity and informative power. It scales skills from highly business management skills to technical skills. Hereby creating a wide array of skills necessary for the digital marketer. While providing a nice model the study did not fulfill the demand for being specific about what concretely needs to be taught, therefore our study helps to eradicate this short coming.

2.5.7. Loohuis (2019)

A similar study done by Loohuis (2019) is pointing out the need for enterprise education based on the University of Twente. Thus, this report is already interesting because it combines the topic and the same element that will be investigated in this study. The report gives valuable inside that institutes of higher education should collaborate more with companies to improve the teaching content and value. This itself is a valid point. Nevertheless, this study lacks in specific skills and knowledge types that should actually be taught, regardless if being taught in collaboration with companies or not. Furthermore, the study concerned itself with general apprehension skills, especially those concerning the psychomotor domain of Bloom and the lower levels of the cognitive domain.

2.6. Short summary of the literature review

In conclusion it can be stated that all studies strive for improving the educational system. Despite that all studies take on a different approach on how to do that. In combination with our research done about teaching one can clearly state the importance of soft skills. Nevertheless, soft skills (or attitudes) and knowledge without the appropriate hard skills, will make it hard for graduates to find a job. A showcase of those skills in form of a web page is recommended by Hart Research associates [119]. Despite the clear indication that knowledge, skills and attitudes are important it is still not clear which are the most important hard skills that need to be taught at universities for digital marketers today. In the literature research, we therefore established a digital marketing definition (see chapter 2.2.2) which gives an indication of what hard skills digital marketers should have. In addition to the definition what marketing is, specific domains of digital marketing have been defined in chapter 2.3. Defining these domains made it then possible to establish ideal model (see Table 3) of what should be included within the digital marketing curriculum. Furthermore, models from chapter 2.4 concerning teaching and learning are taken to elaborate on the comparison between the ideal model and the case universities.

[119] Hart Research Associates. (2013). *It Takes More than a Major: Employer Priorities for College Learning and Student Success: Overview and Key Findings*. Association of American Colleges & Universities. Retrieved 20 April 2020, from https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary.

3. Research methodology

This chapter explains which methodology has been used for this study. It starts by explaining how the literature review was conducted and then how the data was collected. After that the strategy underlying the interviews will be highlighted and the interview guide presented. The interview evaluation methodology is shown next. At last the measures for making this study valid, reliably and generalizable are presented.

3.1. Literature review methods

This chapter gives a guideline how the literature research was conducted as presented in the previous chapter to arrive at the state-of-the-art insights on teaching digital marketing at HEI regarding knowledge, skills and attitudes. The main resource for the literature review was scientific literature provided by the online portals of the university of Twente (UT) and the Lappeenranta-Lahti university of Technology (LUT) as well as physical books from the LUT library. As the study is positioned within the fast paste environment of digital marketing the literature review contains not only scientific but also other online sources. Hereby either sources of high credibility such as IBM and Cambridge dictionary but also different sources of less credibility were taken combined to prove a certain concept or statement. The keywords that have been used in order to conduct the research will be highlighted in the following for each chapter individually.

The research for the marketing part started with an offline literature research for digital marketing in the university library of Lappeenranta. After grasping the overall concept, further online research under the key words digital marketing, marketing, digital marketing skills and components of digital marketing have been conducted on Google Scholar, Wilmafinna and digital library of the UT. After being able to define what digital marketing is and what the domains of digital marketing are, the research focused on each of the domains of digital marketing. Hence the key words aligned with the five components web analytics (research), backend programming, content management, (marketing) design, and reporting. These domains were later on combined with the KSA theory to create an ideal model, how the marketing curriculum should look like.

For the analytics part, further key words were data bases, managing data, data types, analytical tools, marketing analytics and key performance indicators for digital marketing.

Backend programming was its one key word as well as importance of backend programming for digital marketers.
For content management also content management platforms as well as the Cialdini principles from communication science.

Marketing design was research with the key words marketing design, design tools and marketing design tools. Reporting was researched with the word digital marketing reporting.

The teaching part was research via searching for learning models. As experimental teaching seemed most promising, authors of this learning direction were searched out. Here Kolb and Bloom presented the most promising approaches of teaching/ learning.

By combining marketing and teaching literature essential components of the research questions are investigated in detail. The review on marketing content and best learning practice, therefore, help defining how the ideal digital marketing education looks like. Thus, by providing an ideal model such as shown in Table 3 to evaluate whether or not there is a gap between university teaching and practice. Furthermore, the literature review on teaching, helps to explain why there is a gap (Bloom as cited in [120] [121]; Burke & Rau, 2010; Kolb, 2015). To structure the solution for the universities Duit's model (2007), Table 4, is used as base for this study framework. Therefore, the marketing literature review concerns itself with the intentions, topic of instruction and the media, while the teaching literature review concerns itself with the intention, models and limitations based on the model in Table 4.

[120] Vikaspedia.in. *vikaspedia Domains*. Vikaspedia.in. Retrieved 13 April 2020, from https://vikaspedia.in/education/teachers-corner/bloom-s-taxonomy-of-learning-domains.
[121] Persaud, C. (2018). *Bloom's Taxonomy | The Ultimate Guide To Bloom's | Top Hat*. Top Hat. Retrieved 13 April 2020, from https://tophat.com/blog/blooms-taxonomy-ultimate-guide/.

3.2. Data collection

The data needed for this case study is collected via semi-structured interviews. The marketing professors from LUT and UT are interviewed about their digital marketing curriculum and what they do in order to educate valuable professionals. There are three different options for the interviewer, structured, semi-structured, or unstructured interviews[122][123]. Open interviews hereby are especially difficult to analyze because of the versatility of information they can provide (Schein, 1990, p. 114). This is because specific answers cannot be prepared by the interviewee, the interviewee can influence the interview a lot more, depending on the ability of the interviewer to conduct the interview. Therefore, for topics that are highly complicated and do not have an obvious answer unstructured interviews tend to do best[124]. Structured interviews in comparison predefine all interview questions before the interview actually starts. They are characterized by having standardized inquiry processes, being a quantitative observation and are easy replicable[125]. These characteristics help not only the interviewer to receive a quantifiable and measurable result but also help the interviewee to better prepare for the interview questions. The last type of interview is the semi-structured one. The semi-structured interview combines the best aspects of the previous types. It allows for structuring of the interview but also for being flexible ones the situation requires it.

Using open ended research question within the semi-structured interviews provides this study with an in-depth view how the university thinks about and how it aims to teach students digital marketing. In contrast to a fully structured interview using open ended questions animates the interviews to think more about what they are actually doing in contrast of answering simpler straight forward questions. Despite having a small sample size of interviews, this study still can provide, especially for the specific case universities because stronger emphasis can be placed on the case specific circumstances (Eisenhardt & Graebner, 2007).

Using elaborated insides of the literature review therefore, as an ideal state of what a marketer should do provides this study with a solid framework to compare the data against.

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[122] Formplus Blog. (2020). *Structured vs Unstructured Interviews: 13 Key Differences*. Formpl.us. Retrieved 3 July 2020, from https://www.formpl.us/blog/structured-unstructured-interview.
[123] Zojceska, A. (2018). *Difference between structured, unstructured and semi-structured job interviews*. Blog. Retrieved 3 July 2020, from https://www.talentlyft.com/en/blog/article/92/difference-between-structured-unstructured-and-semi-structured-job-interviews#:~:text=and%20unstructured%20interviews.-,A%20structured%20interview%20is%20a%20type%20of%20interview%20in%20which,are%20not%20prepared%20in%20advance.
[124] Formplus Blog. (2020). *Structured vs Unstructured Interviews: 13 Key Differences*. Formpl.us. Retrieved 3 July 2020, from https://www.formpl.us/blog/structured-unstructured-interview.
[125] Formplus Blog. (2020). *Structured vs Unstructured Interviews: 13 Key Differences*. Formpl.us. Retrieved 3 July 2020, from https://www.formpl.us/blog/structured-unstructured-interview.

3.2.1. Interview guide

In order to get the reliable results, research has shown that it is important to use those questions that reflect the purpose of the study (Chigbu, 2019, p.2). Therefore, an semi-structured interview seemed to be the best fit because it enables the researcher with the ability to prepare the interview questions beforehand but also allows for the questions to be changed during or new questions to be added during the interview in order to get the most of it.

Marketing professors and researchers alike from the UT and LUT were contact and presented with the purpose of the study, the reason why they were chosen and the interview questions.
For ensuring the appropriateness and the quality of the interview questions, the first interviews were conducted with my supervisors from the LUT and UT. After conducting the first interviews with my supervisors from the LUT and UT the interview questions were approved, and the interview process proceeded.
The Following questions were sent to them, which were based on the framework of Duit (2007), see Table 9.

Table 9: Interview questions

Question	**Evaluation Method**
What is your goal to teach the students within your marketing / digital marketing curriculum?	Open question
Do you think the curriculum does prepare the student with the knowledge and skills they need to succeed in their business life?	Open question
What do you actually teach students?	Open question
Do you think one/two years are sufficient to prepare the students for their business life?	Open question
How would you rate skills in relation to knowledge?	5-point Likert scale

Overall, the questions were kept open ended in order to get the interviewees talking as much as possible. Only when the interviewees would derive from the topic further clarification questions were asked.

All interviews were conducted via Skype or Microsoft Teams due to the corona related situation. During the interview, interviewees were friendly welcomed and once more introduced to the purpose of this interview. After that the questions were asked in the order presented above. While all questions seem to be similar all of them had a different point of view. The first

one was asking in general how the universities are teaching Marketing/Digital marketing and the second one asking for the teacher's opinion whether or not this is sufficient for to prepare students for their business life. The third question was directly target to the teacher to reflect on what they are teaching. Hereby getting them talking about their own courses and hereby verifying whether or not it can be true what was said in the first questions. Therefore, the answer to this question were less important than the alignment between what they are doing and what their opinion of the curriculum is.

The next question was more general targeted again at the curriculums and whether the time itself is sufficient enough.

The last question asked the teachers to give a better indication how they value the KSA against each other. Due to the interviewees having troubles with this question and their answers were accordingly not consistent, the last question has been taken out of consideration for the evaluation.

3.2.2. Conducted interviews

The interviews were conducted with variety of professors, doctors and teachers involved in the marketing track of the UT and LUT These group of people were considered of special importance to evaluate the research question as they are involved with the topic of marketing teaching and research. In order to not infringe the personal data rights of the corresponding interviewees, no names, titles or other data that might be used in order to trace back their identity will be given. One measure to insure this is not asking for any information related to the person itself. Hence no questions regarding their age, name, nationality or gender have been asked. Another measure that has been taken is that the interviews weren't directly recorded but the information gathered in an indirect manner.

Table 10: List of interviews

Interviewee	Date	Interview duration	University
1	20.05.2020	12.00 min	LUT
2	10.06.2020	23:38 min	UT
3	16.06.2020	14:49 min	UT
4	22.06.2020	23:14 min	UT
5	24.06.2020	19:05 min	LUT
6	24.06.2020	22:06 min	UT
7	11.08.2020	22:25 min	LUT

3.3. Evaluation

The evaluation of this study is according to the two research questions also separated into two parts. The first part compares therefore with our ideal model established in Table 3. By comparing the ideal model with what can be observed in reality, resembled by the case universities, a gap emerges.

In order to answer the second research question the models of Bloom and Kolb were used. The model of bloom was taken because it helps our study by providing a measure for each of the cells in our model, Table 3. Therefore, it explains in depth what level of the KSAs the universities try to teach. By providing this hierarchical measurement method, it can be spotted whether or not the university teaches all the lower levels in order to accomplish the higher ones, if not, our recommendation will be that they need to start further down the ladder. In addition, the theory of Kolb was used. Kolb basically tells that in order to achieve the best possible teaching outcomes, different learning methods need to be used. Thus, we can use this method to see if the curriculum is versatile enough to provide for optimal learning or not. In case it is not we therefore can recommend switching up the learning approaches and tools, see 2.4.4.

3.4. Reliability, validity and generalizability

In order to achieve scientific rigor, when it comes to reliability, validity and generalizability (RVG) qualitative studies struggle to provide statistical prove (Noble & Smith, 2015). Therefore, it is important to ensure that the despite statistical prove, actions are taken to ensure RVG. The methods as proposed by Noble and Smith (2015) are thus helping to enhance RVG. Therefore, in this chapter we want to clarify, according Sandelowski (1993), to how RVG and scientific rigor is achieved.

3.4.1. Reliability

3.4.1.1 Test-retest reliability

The test-retest reliability is, if other researchers would try to conduct the same study with the same interviewees at another point of time and would receive the same results as this study. Due to the given time frame of the thesis this reliability cannot directly be observed by the researchers. Despite that, the curriculums of the universities only change fairly slowly. Assuming that the answers of the interviewees are related to the curriculum that is taught at university, we therefore still can assume that there is test-retest reliability as long the implications of this study are not applied and if the requirement of the practice do not change.

3.4.1.2 Internal consistency

One downside of internal consistency is that there needs to be a high enough number of observations in order to be statistical proven. According to Eisenhardt and Graebner (2007) this strongly impacts the perceived internal consistency of a study. They further state that a small sample size that directly investigates the phenomenon of interest can still yield in higher actual internal validity, despite not reaching statistical consistency (Eisenhardt & Graebner, 2007). This is especially the case for datasets that do not get any novel results with increased numbers of observation. Despite small variances most teachers agree on the fact that the digital marketing curricula are highly theoretical while practical is limited to the usage of conceptual models. The difference in interview outcomes, can be explained by their attitude towards this. The study accounted for the difference in opinion by asking not only about what the interviewees were thinking about the curriculum but also what they were teaching within this curriculum. Hence their answers were, once accounted for their personal opinion, seen as internally consistent.

3.4.2. Validity

3.4.2.1 Face validity

Face validity was ensured in collaboration with my experienced supervisors. Face validity was established by conducting the interviews with them first, and then evaluating the fitness of the interview questions together. Within this step two approaches of validation are included, scientific peer (Sandelowski, 1993) and respondent evaluation (Long & Johnson, 2000). This has been done because the supervisors have a more in depth understanding of the study and thus, have more background knowledge which helps them to answer the interview questions. A second measure for this type of validity is by checking whether or not the interview questions are clear for the interviewees and respondent evaluation (Long & Johnson, 2000). One interview question therefore has been taken out of evaluation as it confused the interviewees which would have impacted the face validity. The question excluded from evaluation was: “How would you rate skills in relation to knowledge?”.

3.4.2.2 Content validity

Content validity was ensured in collaboration with experienced supervisors. To assure content validity the concepts and models used to evaluate the interview outcomes, were discussed based on their fitness to evaluate the phenomenon. The second method was creating a solid and well researched definition for digital marketing and solid research for digital marketing KSA.

Hereby the researcher is able to triangulate the outcomes (Sandelowski, 1993; Long & Johnson, 2000) from his personal experience and observation at the universities, the research literature what the market requires from digital marketeers and the interview outcomes. The different styles of acquiring the data then contributed further to the content validity (Kuper, Lingard, Levinson, 2008; Noble, Kelly, Hudson, 2013), despite time and resource limitations of the researcher (Eisenhardt & Graebner, 2007). Furthermore, interviewing highly knowledgeable individuals from the institutes further contributes to the content validity of this study (Eisenhardt & Graebner, 2007)

3.4.3. Generalizability

Due to the topic of digital marketing being fast paced, this study aims to, but cannot assure for generalizability. This is especially the case because the topic of digital marketing is a fast paste phenomenon that once written can already be outdated again. Despite that, using the cases of the two universities facilitates us with the inside, to give a model that can be stated as having transferability (Bryman, 2012; Bryman, Bell, Harley, 2018). Using only two universities aims the focus on the most critical part of the phenomenon and hence, helps us investigate critical points that are not statistically significant to be found in studies that are generalizable.

4. Results

4.1. Interview findings – UT

What is your goal to teach the students within your marketing / digital marketing curriculum?

The goal of the marketing/digital marketing curriculum at the UTwente differs widely, depending on the interviewee. On the one side there are advocates of a more practical curriculum using cutting edge technology and tools in their courses e.g. 201400068 - Digital Marketing for Networked Bus. On the other side there are teachers that believe that overall strategy is more important than any technical skills, as these more operational skills, such as Google advertisement will go obsolete and the strategy behind targeting apparently will not.

In general, these opposite goals are represented in the curriculum by splitting most courses into a practical part in which students learn how to cope with the tools and a theoretical part where they learn the strategy behind it. While the theoretical part gives the students an inside about the more general frameworks and definitions of marketing, the practical part is supposed to teach students applying conceptual models and qualitative and quantitative methods. Due to time limitations and laying the responsibility of what tools and methods to use mainly in the student's hands, qualitative and quantitative analysis rather stick to interviews, observations, focus groups and maybe experiments, but rarely cutting-edge tools for online customer evaluation or placement of advertisements. When focus is placed on technological tools for the practical part then it mainly focused on research specific skills e.g. scientific writing and data evaluation but not data collection as in the 201400018 – Master Class.

Do you think the curriculum does prepare the student with the knowledge and skills they need to succeed in their business life?

The answer to this question was compared to the previous one, inconclusive. This is due to the complexity and the fast pace evolution of the marketing/digital marketing subject. Despite that all teachers agreed upon the fact, whatever they teach at university shall be considered a fundament for more future learning. This was explained by the variety of jobs that can be performed based on the degree of the students. With the variety of jobs possibilities and the multitude KSA associated with them, it is impossible to teach everything about every job possible within a marketing/digital marketing degree, as it would take multiple lifetimes.

What do you actually teach students?

Due to the nature of this question, checking for consistency of the answers, the outcome of the question was less important than its results compared to the first 2 questions. Overall, there was a congruence between what they were saying and what they claimed in question one. Despite that one difference became apparent. This is the teacher's overall weight between theoretical and practical teaching. Also, the ones that were advocating for a more practical curriculum, when asked, described the course being rather theoretical than practical, despite good aspects such as the collaboration with a variety of companies. One issue that impacted the teacher's capability here were the steadily evolving tools, the set time frame within the Twente Education model (TOM model) as well as their limited time and contact with the companies.

Do you think one/two years are sufficient to prepare the students for their business life?

Another point that needed to be addressed was the time, the students have for obtaining their master's degree. Especially at the UT, with their one-year master's degree, this question is essential because what can students learn within one semester if they the second semester is mainly reserved for their thesis? Here the opinion of the teachers was quite clear that the master's degree needs to be seen as an extension of the bachelor's degree and not as its own entity. Hence the master's degree alone would be of little value without the appropriate bachelor's degree. Although, those two are seen as one it remains unanswered why a lot of the obligatory courses of the master's degree for student that followed the recommended path overlap so strongly. Thinking about the marketing specializations specifically it becomes questionable if it makes that much difference whether one has done the bachelor beforehand at the UT. This is because courses such as 201600002 - Entrepreneurial Leadership & Responsible Organizational Design do not align with the specialized path in the master and the specialization course in the bachelor are only for a duration of one module. This specific module was according to the teachers also just enough to teach students about a certain part of digital marketing namely about Google Analytics but not about the closely relating factors such as website and content creation. Thinking about the close relation between all the components of digital marketing as presented above, it remains doubtful that the timeframe is enough to teach all the necessary KSA.

4.2. Interview Findings – LUT

What is your goal to teach the students within your marketing / digital marketing curriculum?

At the LUT, as with the UT, the opinion about the goal of the curriculum differed depending on the interviewee.

Nevertheless, teachers did not seem as convinced about the fact that students would learn everything, they need in order to succeed in business life. Rather that it would also highly depend on the students themselves and how they plan to customize their own curriculum. Therefore, every student's individual curriculum is more diverse compared to the ones at the UT. Therefore, despite not including everything students can specialize in a certain area of digital marketing and in this specific area they receive a deeper understanding. Same counts for technical skills. Students have the opportunity to learn some hard skills that are necessary for marketing, especially the statistical language R. Other hard skills are left out, because in general the master's degree is target towards creating academical scholars and not professional practitioners. Therefore, these teachers claim that there is a general flaw within the curriculum based on the previous education of the master students. Meaning that some do already have extensive job experience while others are taking their education to get to their first job. Accordingly, the goal of the curriculum should serve different types of students differently. Meaning for the ones with job experience, getting deeper inside about what they are doing, while providing the ones that don't with the fundamental KSA to succeed in the career later.

Do you think the curriculum does prepare the student with the knowledge and skills they need to succeed in their business life?

As indicated in the earlier question, whether or not the curriculum prepares the student for their future business life depends on their own goal, starting position and how they structure their own courses. Despite that option that students have the LUT tries to make its curricula as practice relevant as possible by consulting with the LUTs company advisory board. Therefore, the teaching organ organizes one meeting a year, four planned for the next years, with the LUTs company advisory board, where all professors of the digital marketing track should be present. What remained unclear is how specific the advisor board looks into the teaching of the LUT. Thus, whether they are only talking about the general topics (domains) or what specific KSA they should teach in their courses.

What do you actually teach students?

When asked what the teachers teach students at the LUT, they responded with a wide range of marketing associated knowledge components and one specific skill component, namely the analytical programming skill R. On the one side business to business marketing as well as entrepreneurial theory was of importance. On the other side there was digital marketing theories and strategies. Only one of the interviewees of the LUT was thinking about the importance of marketing/ digital marketing skills apart of applying conceptual knowledge from the knowledge domain. Digital marketing topics that students should know, were: 4S, AI, Big Data, social media, customer behaviors and customer touch points. From the B2B marketing and the entrepreneurial side, knowing in detail about the classical 4/7P marketing mix were seen as important theoretical knowledge for the student to know. For the entrepreneurial course the students were mainly left to their own imagination and creativity to enhance their attitude. Within the courses related to R student were supposed to be able to use the program to analyze data statistically and find out implication of those results. Future potential hereby was seen by the interview in using R to collect data from social media, to make the courses more practice relevant.

Do you think one/two years are sufficient to prepare the students for their business life?

As with the UT, the interviewees were not completely convinced that 2 years were enough for educating a professional marketer. Interviewee 4 highlighted that having a bachelor's degree is not enough for making one's master's degree in 2 years. Instead one should, before obtaining once master's degree, have experience in the industry. Hence working experience is according to this interviewee a must. Hereby the interviewee lays the importance of teaching students' technical skills in the hands of their business experience. Therefore, when not having this business experience the answer is clear that 2 years are not enough in order to obtain a master's degree.

5. Analysis

The discussion part combines all the empirical findings from the interviews, the literature research and theory about teaching. In doing so the two research questions of this study shall be answered.

1) *What, if any, is the gap between the practice of digital marketing and what students learn in academia about digital marketing in terms of knowledge, attitude and skills?*

2) *How can this gap be closed and what are the implications for change of curricula?*

5.1. What, if any, is the gap between the practice of digital marketing and what students learn in academia about digital marketing in terms of knowledge, attitude and skills?

First it has to be noted that not all skills are of equal origin. The term KSA therefore classifies what types of skills there are. The acronym stands for knowledge, skills and attitude. Knowledge is the embodiment of all the information an individual has of a certain topic, this can be for example be aware of regulations, conventions or certain people to contact. Skills are the ability of being able to handle certain situation with or without tools. In contrast to knowledge, skills are of a practical nature and therefore will improve over time while knowledge is either there or not [126] [127] [128]. Attitude or ability, how it is sometimes referred to, refers to the natural given capabilities of a person and is not something that can easily be studied [129]. As abilities are natural predispositions, they impact the effectiveness of the knowledge gathering and skill acquaintance. Despite being predisposition, a person can improve his or her abilities when performing task associated to that specific ability. Given that, we can evaluate whether or not there is a gap between academical teaching and marketing in practice. Of special concern are knowledge and skills because in contrast to attitude they are easier taught and evaluated than attitude. This is because of straightforward teaching methods and simpler progress evolution.

[126] Indeed.com. (2020). *Knowledge, Skills and Abilities (KSA): Definitions and Examples | Indeed.com*. Indeed.com. Retrieved 31 March 2020, from https://www.indeed.com/career-advice/career-development/knowledge-skills-and-abilities.
[127] Staff Squared. (2015). *The Difference Between Knowledge, Skills and Abilities | Staff Squared*. Staff Squared. Retrieved 31 March 2020, from https://www.staffsquared.com/blog/the-difference-between-knowledge-skills-and-abilities/.
[128] The Balance Careers. (2019). *KSA: How to Use the Knowledge, Skills and Abilities Model*. The Balance Careers. Retrieved 31 March 2020, from https://www.thebalancecareers.com/understanding-knowledge-skills-and-abilities-ksa-2275329.
[129] The Balance Careers. (2019). *KSA: How to Use the Knowledge, Skills and Abilities Model*. The Balance Careers. Retrieved 31 March 2020, from https://www.thebalancecareers.com/understanding-knowledge-skills-and-abilities-ksa-2275329.

When the teachers were asked, what their goal to teach marketing/digital marketing students is, the general answer was: “Our goal within our curriculum is to teach the students the strategy behind marketing and what types of technologies there are.” About half of the interviewees mentioned that they would deem the operational aspects and the ability to use current tools unimportant. Evaluating the interviewee’s answers based on what we defined as digital marketing a first discrepancy appears between those two. On the one side universities try to teach students conceptual models, theories, classifications and underlying strategies of marketing practices. On the other side is the tech heavy definition derived from the CEOs and scientific scholars. The definition of Chaffey (2013, p. 15) lists up some of the digital interaction points between companies and their customers. They clearly state that it is not only about a single interaction point but rather the complexity of all their interactions and all background processes that run the interaction points. This is a clear sign for universities that to create well trained professionals, not only the knowledge component needs to be taught but also the underlying skills to facilitate the interactions points, “*web sites, online ads, opt-in email, interactive kiosks, interactive TV or mobiles”*(Chaffey, 2013, p. 15) need to be taught.

Comparing the information gained from the interviews with the Table 3: Digital marketing KSA matrix helps to identify the areas where there is a gap between university teaching and marketing in practice. Hereby knowledge is for universities clearly more important than skills and somewhat more important than attitude. Interviewee 3 and 5 both state that it would be beneficial for a digital marketing curriculum if there would be a more practical component involved. Interviewee 3 therefore thinks there should be a practical component in form of an internship incorporated. In contrast interviewee 5 thinks if there is a more practical part it should be placed in the bachelor and students should leave university in order to get a job experience before proceeding with their master study. Therefore, both interviewee 3 and 5 make it clear that in terms of practical skills universities are missing something.

Further we can look into the 5 digital marketing domains of Table 3 and compare them with the courses, offered at the universities, as well as the interview responses. For the backend programming domain, the LUT provides mainly R programming but also basics in SQL and Python. The UT in contrast teaches some course in R but the other two are left out. As R is also a statistical tool for academical research and analytics, it can be criticized that those are only taught in order to conduct scientific research as shown by the model of Burke and Rau (2010). Despite that, digital marketing requires a lot of research to create accurate market and customer

analyzes. Therefore, by teaching students R, no gap arises. How they are taught to utilize it therefore could be more practically oriented. Digital marketing does not only rely on analytical backend programming but also how to create web presences, e.g. creating a web page. Here both universities do not provide a curriculum where digital marketing students learn how to create their own web pages. Contra arguments for this are that there are web developers for this task and marketers can use a simple web page builder in order to create a web page. Hiring an additional web developer costs money for the company and with web page builders one is limited to the provided functionalities.

Knowing at least some web programming, therefore, can help to customize one's web page and helps to safe time as digital marketeers do not have to rely on external help continuously. Hence knowing about web page builders and about some web programming, is definitely a requirement that digital marketers should fulfill. Apart of the technical skills digital marketers should also have some specific knowledge and attitude in this domain. In terms of knowledge, they should know the basic principles how to code, what programming languages there are and what they are used for e.g. artificial intelligence. Here both universities do a good job in teaching students the principles of backend programming, what programming languages there are, what they are used for and what current AI software is capable of. In connection with the assignment at hand also the attitude associated with backend programming, should be satisfied.

Despite being separated in theory some of the domains of digital marketing overlap. This is also the case for backend programing and analytics/research. Hence some of the KSA can be found in several of the domains. In data analytics this overlap to backend programming can be seen for the statistical programming language R, which helps coders to analyze complex scenarios. Next to R it is also recommended being skilled in using SPSS and Excel as they tend to be faster and easier to use. Excel in specific can not only be used for statistics but a wide range of business application such as cost/benefit calculations. For the marketer this means whether or not a certain activity is worth performing or not. The UT excels with teaching about SPSS about 4 times within the curriculum, some R, but therefore, only provides one basic Excel course. The LUT does not show the students any SPSS but therefore offers an in-depth course in Excel and R courses. In response why they so, LUT claims that SPSS is rather outdated and limited in its functionality compared to other statistical programs such as R, STATA or SAS.
For the knowledge section of this domain, the taught content is huge. On the one side both universities teach about statistical tests and how they help to improve analytical results. On the

other, they teach a lot about data itself and how it is composed. Furthermore, their goal is that students are critical, think analytically and are precise in what they are doing. Both universities show here, by teaching tools as SPSS, R and Excel that they want students to be capable in the classical research analytics and a wide range of task. The LUT allows for completing Googles Analytics certificate as part of the digital marketing certificate course and doing a Facebook campaign as part of the Digital marketing in Auction course as electives. Also, the Google Analytics certificate can help understanding the Google's algorithms, thus provides knowledge, it still lacks the skills of actually working with that tool. Which was not clarified for the course with the Facebook campaign was how students create content they use for the course. Also, content creation is not a part of the analytics/research domain, it has to be mentioned in the context because without the right content they learn the analytical parts behind social media marketing tools. Here the UT had an advantage over the LUT as they participate in the Google Analytics challenge. Here the students were incentivized to do their Google Analytics certificate but where also able to set up their own Analytics campaign. What they could not influence unfortunately was the website they were working with as they were provided with case companies. Thus, depending on the company students could actually see how website design had an impact on Google Analytics or not. But unfortunately, the UT did not include any usage of social media analytics in their curricula. Thus, it can be stated that both universities lack in providing students with skills for search engine optimization and social media analytical tools. These tools are becoming ever more important for marketers as most of the social media sites provide metrics but not the pure data anymore.

Reporting KSAs are highly valued at both universities and are looked upon in every part of the curriculum. This is because deliverables are mostly within report or/ and presentation form and strong collaboration between students is essential in order to perform group work with people from different backgrounds. For that, universities teach students about formatting rules, phrasing, collaboration principles, citation and aesthetics guidelines in order to make the reporting as convincing as possible. But the universities do not only want students to have this knowledge but also have an attitude for aesthetics, being precise, and to be convincing. On top the universities provide a Google account (UT) or a MS-Office account (LUT) where the students can use the capabilities of the software to collaborate together in these reports. Here there is, based on our research only one additional tool that is beneficial for students to use, the tool Slack. Providing students with the tools to collaborate, students learn how to use these tools

to plan their group assignments and projects better and to create reports that fit the need of the target person/s.

Content management can also be defined as the essence of marketing[130] [131]. This is because content management uses insides from backend programming, analytics and reporting as well as content produced by the design and impact domain. Therefore, a lot of knowledge is required of marketers to be able to combine all the different domains of digital marketing. Here both universities do a good job, teaching students about marketing mix, communication science theories, the customer journey and the types of marketing. Despite providing a big knowledge base for students the curriculums of the university clearly lack in the transformation of this knowledge into skills and practical application. Only one course at the UT, 201400068 - Digital Marketing for Networked Business attempted to close the skill gap for upcoming digital marketeers by teaching students how to use Google Advertisement. Other relevant software skills, such as Facebook advertisement, WordPress or WooCommerce were not taught (see Table 3). Attitudes that benefit the knowledge and skills of content management are partially taught by both universities. The attitudes, being innovative and adjusting to fast change, are facilitated by varying assignment groups, frequent assignment deadlines for a variety of topics from different industries that need to be answered. Hereby students learn to use their knowledge across different industries and therefore see new opportunities for their case companies to expand business.

The last domain of digital marketing concerns itself with the design and the impact it has on the customer. From the knowledge point of view there are overlaps with the previous domains again. Knowledge about the marketing mix is therefore taught at both universities. Both universities lack in teaching communication science knowledge e.g. what color, shape, form, material have what impact on consumers. Also, knowledge about what tools fit best for what type of graphical and design purpose is missing. Of the tool skills shown in the digital marketing KSA matrix, only MS PowerPoint is facilitated by assignments asking for presentations. Compared to the amount of skills that are presented by the ideal model, teaching only one of these skills presents a clear gap between the ideal model and what is taught in the case universities. Despite people arguing that graphical design is only necessary for graphic designers, one needs to consider that small adjustments need to be performed frequently. As

[130] marketingstrategyexpert. (2018). *Context—The Essence of Content Marketing*. Marketing Strategy Expert. Retrieved 16 August 2020, from https://marketingstrategyexpert.wordpress.com/2018/02/22/context%E2%80%8A-%E2%80%8Athe-essence-of-content-marketing/.
[131] Evans, H. (2017). *"Content is King" — Essay by Bill Gates 1996*. Medium. Retrieved 16 August 2020, from https://medium.com/@HeathEvans/content-is-king-essay-by-bill-gates-1996-df74552f80d9.

well as being useful for marketers to be able to illustrate some basic design that can later be optimized by graphic designers. Being able to do so as a digital marketer, helps reducing waiting time for companies as well as cost. Furthermore, for complicated designs, where a designer is needed the digital marketer needs to know the basics in order to be able to communicate and interact with the graphical designer effectively and efficiently. In terms of attitude the curricula of the universities teach the students being innovative and communication skills but lacks in being creative in terms of graphics.

Table 11: Results research question 1

	Knowledge	*Skills*	*Attitude*
Backend programming	✓ ✓	— —	— —
Analytics/research	✓ ✓	— ✗	— —
Reporting	✓ ✓	✓ ✓	✓ ✓
Content management	— —	✗ ✗	— —
Design and impact	— —	✗ ✗	— —

Table 12: Legend for Table 11

Good fit	**Ok fit**	**Poor fit**	**LUT**
✓	—	✗	**UT**

In conclusion it can be said that the digital marketing curriculum specifically at those two universities provides students with adequate knowledge and somewhat attitudes but clearly lacks in teaching students the necessary skills for digital marketing domains, see Table 11. Especially the universities lack skills in the domains of content management and design and impact but also knowledge of this domains. Furthermore in Table 11 it can be spotted that for attitudes, between the ideal model and the case universities there is only an OK fit. This can be explained one the one side because of the difficult nature of attitude, being composed out of everything someone has learned before but also because there is an imbalance between skills and knowledge. As attitudes enhance knowledge and skill, and skill and knowledge enhance attitude, attitudes are not taught well, if there is a huge big difference between knowledge and skill.

Thus, there is a gap between what is required from marketers in practice and what is taught at universities.

5.2. How can this gap be closed and what are the implications for change of curricula?

This study has already established the gap between digital marketing in practice and teaching in academia. In this part the questions "*How can this gap be closed and what are the implications for change of curricula?"* shall be answered.

In order to improve the curriculum, we therefore researched learning styles. The most promising theories are provided by Kolb and Bloom. Bloom distinguishes between three domains of skills similar to the KSA model by Kraiger, Ford and Salas (1993). Despite slight differences between KSA and Blooms domains we assume that they resemble the same in order to create our model. We can do that, because as a whole, both the domains and the KSA consist out of the same elements. The terms of knowledge, skills and attitude are easier to understand than cognitive, psychomotor and affective domain. Each of Blooms domains has their progression ladder where one can only achieve the next higher level if the lower one has been obtained beforehand by the learner. Hence seeing that universities lack mostly in skills (psychomotor domain) universities need to put a greater emphasis on that progression ladder. Therefore, teaching students

- how to perform a skill
- when to perform a skill
- how the task that is performed with the skill looks like in a simple environment
- a complex environment
- being able to adapt the skill in foreign environments
- how to use aspects of the skill on new skills.

Meaning that universities should teach the students some of the basic and advanced skills from all the skills out there (see Table 3: Digital marketing KSA matrix When students learn a certain amount of these skills, they then will be able built up their skills to higher levels and further learn similar skills easier, based on the theory of Kolb. Hence if students do not have specific software skills in one area, having a knowledge in an associated program will help them to grasp the new one way faster. Thus, different learning experiences promote each other.

Bloom provides a good guideline on how to evaluate and on which levels universities need to teach students the KSAs. The framework by Kolb makes it clearer that relying too heavily on one type of the KSAs will not only reduce the range of KSA, a university graduate student has,

but also the depth of understanding of the taught KSA will be reduced. This is because according to Kolb different KSA need different learning experience and different learning experiences support each other. Kolb defines therefore 4 types of learning experiences; concrete experience, reflective observation, abstract conceptualization, active experimentation based on the perception and the processing continuum to understand this systematic better. For universities and their curriculum this means, they need to include more practical situations for the students. Hereby not only university made practical situation but actually practical situations of companies. This can be for example included via internships or projects where students directly work on side of the companies. Another point would be reducing on classical lectures and therefore introduce more online learning. Hereby the universities could for example use already existing learning platforms such as Skillshare and combine it with a project where the need to do something out of the environment of the online learning platform. Only when those four types of learning, concrete experience, reflective observation, abstract conceptualization, active experimentation all play an equal part on the curriculum universities will be able again to provide the best educated digital marketers.

Concluding the gap can be closed with curricula that offers more versatile teaching for all elements of the KSA digital marketing matrix. For universities this means that there should be equal parts of the curriculum be associated to concrete experiences, reflective observation, abstract conceptualization and active experimentation. Furthermore, this means universities shall not only strive towards teaching higher states of the KSAs but built up onto the basics. This is because the higher stages of the KSAs cannot be taught without having the basics for it. Starting with the simple understanding of practical tasks and concepts, and later one goes towards deep understanding of the topics.

For the UT this means that they have to restructure the TOM model based on the implications from Kolb and Bloom, hence starting from the bottom of the KSA ladder and changing up the curriculum including in order to include theoretical, practical, theorizing and theory proving parts. Further it should be considered that not all students learn in the same way. Meaning that some students will benefit from more theoretical or practical or theorizing or theory proving parts than others. Hence giving the students more options to pick and choose their curriculum individually can help students to pick courses that fit their learning style and their career development. The TOM model enforces time limitation on the teachers. This prevents them from creating courses that are more elaborated. Therefore, teachers are limited on what they can teach and cannot teach courses that do not only teach the basics of the KSAs but also higher

levels of the KSAs as well domain overlapping knowledge and attitude. After the restrictions the TOM model are lifted up, the UT then can concentrate on creating courses that reflect the ideal model.

For the LUT this means that they have to elaborate on their curriculum in a way that all of the components of the ideal model are covered. Here especially emphasizing skills in the domains of content management and design and impact

6. Discussion

This chapter presents and explains the main findings of this study and how they relate to other studies. Furthermore, the contributions and limitations are explained, and future research topics based on this study proposed.

Both universities, when asked about what they intend to teach the student within their curriculum descried higher states of blooms taxonomy, especially for knowledge and attitudes. Hereby both universities failed to grasp the importance of the basics in order to achieve those higher states. Going that far that university should be able to expect from students to have acquired these basics by themselves before even starting to study at university. This was especially true for the skills of our framework. Considering how education systems in Europe generally work, with students generally doing their degrees before having any practical working experience, makes it even more important that universities teach the basics first. Meaning universities are teaching students mainly knowledge of higher levels, according to bloom, but fail to provide them with the appropriate skills to execute that knowledge practically. By doing so they also hinder their ability to teach students the attitudes behind each domain, as attitudes enhance knowledge and skill, and skill and knowledge enhance attitude.

In terms what universities teach students, it is also essential to talk about the intended learning outcomes (ILOs). Hereby one has to distinguish between the KSAs as most universities, when defining their ILOs, tend to emphasize attitudes and higher levels of knowledge and skills. This is also the case for the UT and the LUT. Hereby stating that critical thinking, preciseness, willingness to learn and to adopt to new situations are their main ILO. Thus, focusing on the most difficult to obtain factor of the KSAs, the attitudes. This might at first sound logical because universities are the most prestigious learning institutes thus only the most difficult and challenging KSAs should be taught there. At second thought and considering Kolb's learning cycle sole focus on attitudes becomes a weakness. This is because based on Kolb learning needs to be facilitated through a multitude of different learning experiences which do not happen in a rather static research-oriented learning environment. This is especially true when looking at how students are graded at universities, mainly on written assignments, reports and written exams about knowledge factors. Also thinking about the fact that attitudes are predispositions it is not easily possible to obtain them if one does not possess them. Hence in order to be able to get attitudes it is even more important to follow the theory of Kolb and provide different learning experiences in order to achieve one's goal. Earlier in the paragraph also higher levels

of skills and knowledge have been mentioned, thus they also still need to be addressed here. In order to understand this topic better we have to address once more the connection between KSAs and the domains, introduced by Bloom. Hereby each of Blooms domains serve as a progression for either knowledge, skill or attitude, see 2.4.3.3. Thus, the lower levels of the cognitive and psychomotor mainly describe about knowing facts/ skills and how to apply the knowledge of skills. Only with enough practice/learning one can achieve the levels in which one has a deeper understanding of the skill or knowledge and can use it in furthermore abstract situations, thus in some way these higher levels of knowledge and skills represent attitudes. As Blooms taxonomy describes it, these levels are chronological, hence one cannot easily skip one step. As Kolb describes it, different learning experiences influence each other. This should also count for the KSAs. Hence one does not educate marketeers to the fullest if one lacks in either of the KSAs. Therefore, especially for students that do not have any job experience, the university also needs to provide experiences for skills as students could not get in touch with these practical experiences beforehand. For the ILOs that also means, taking into consideration where students are KSA-wise, as students that have no job background will need other fostering than ones that do have it.

Investigating the connection between the KSAs among each other is one of the points in which this study separates itself from other studies (Ghotbifar, Marjani & Ramazani, 2017; Lee, 2019; Royle & Laing, 2014; Schlee & Karns, 2017; The Hart Research Associates, 2013) which only investigated one, two or did not make any differentiation between the KSAs at all. Further this study differentiates itself by the method it takes to investigate the gap. Other studies hereby used data from job posting through Linkedin or Indeed (Di Gregorio, Maggioni, Mauri & Mazzucchelli, 2019; Schlee & Karns, 2017). By establishing an ideal model, what KSAs should be included in the digital marketing curriculum, this study enhances the research in the topic by another dimension. Thus, this model can explain the complex phenomenon better than studies that derive from data retrieved from job posting sites. Especially when the provided data does only reflect what companies want but not, what they need (Schlee & Karns, 2017).

Both universities, based on our research, were missing especially practical skills in terms of tools and practices students will need in their later career as marketeers. Especially within the domains of content management and design and impact students were not taught enough. Hence there should be courses about the skills that were presented in the digital marketing KSA matrix.

In order to give some recommendation for the universities to follow the study of Lee (2019) has been taken into account as well as Kolb's learning cycle. Thus, teaching skills, as proposed by Lee (2019) and knowledge behind. Doing so, will foster the student's attitudes and ultimately create young professionals that serve the need of the market. An example for that could be a course about how to set up the web presence for a company using tools such as WordPress, Facebook advertisement, social media, Google Analytics and the knowledge about content management already taught at university. A pre course for this could then be about brand management and how to design a logo which then can be used later on in the web presence creation course.

6.1. Contributions to the literature and practice

The findings of this study have implications especially for the universities of observations as they serve as wakeup call to change and adjust their curriculum towards what the market requires. The study provides universities with a framework, that helps them to identify areas in which their curriculums are still lacking either knowledge, skills or attitudes. Despite having the most impact on LUT and UT, this frame can help other universities to improve their digital marketing and marketing curriculum.

For researches, this study provides a framework to analyze university and other digital marketing teaching organizations. This is done by combining our newly defined domains of digital marketing and the KSA model defined by Kraiger, Ford and Salas (1993). The proposed framework is especially interesting for researches as I can serve as a new baseline how digital marketing education should be investigated as other studies did not provide this. With this framework we also introduced a more concrete way of classifying what has usually only been referred to skills in the literature. By dividing it into the KSAs, future studies therefore will be able to investigate topics concerning marketing education way more precisely and studies are easier comparable. For more inside how this study differs from other see chapter 2.5 and 2.6.

Students or people which are still looking for a university, can use this study to get an idea what is currently needed in practice. Knowing that, they can try to find a university which teaches what is needed or start to prepare themselves, according to the findings here, to improve their chances to get a good job later.

6.2. Limitations and future research

There are two fundamental limitations for marketing as suggested by Zinkhan and Hirschheim (1992). These are that marketing is an applied field and that it attempts to generalize and explain human behavior, which is based on its nature unpredictable, mutable and reactive (Zinkhan & Hirschheim,1992).

Next to these more general limitation of the study, there is also limitation specifically associated to it. This limitation is about the case studies the study uses. By only using two universities the results are difficult to generalize and therefore would need more research. Despite that the identified gap is important because it can help the universities to improve their curricula and thus create better digital marketing graduates. But it is also important because both the UT and the LUT are among the top entrepreneurial technical universities. Thus, teaching students how to start their business. One might question where there is the connection between being entrepreneurial and digital marketing. Looking into what has been done by Lee (2019), see 2.5.5, one can spot a lot of similarities between what KSAs an entrepreneur needs and what a digital marketeer needs. As top universities for entrepreneurship one therefore assumes that digital marketing should therefore also be at a very high standard. Meaning that digital marketing students profit from the universities technical and entrepreneurial KSAs. Due to the high reputation of the universities one therefore can assume that their professors and curriculum are on par with what the market wants.

Despite our best efforts the study is also limited by expectations. Meaning that every stakeholder has a different interest what university should teach them. Thus, the validity of this study is also depending on the university's expectation management for its stakeholders.

For future research this study provides multiple opportunities. One possible future research topic could be a further validation and extending of our Table 3: Digital marketing KSA matrix that serves as ideal model for this study to identify the gap in digital marketing at universities. This could be done by a workshop including digital marketing practitioners and university professors teaching this subject. Another possible research topic could be whether or not the identified gap within the case universities can also be seen at other universities teaching digital marketing.

7. Bibliography

1) Akar, E., & Topçu, B. (2011). An examination of the factors influencing consumers' attitudes toward social media marketing. *Journal of Internet Commerce*, *10*(1), 35-67.
2) Anderson, K. (2020). Getting acquainted with social networks and apps: it is time to talk about TikTok. Library Hi Tech News, ahead-of-print(ahead-of-print). https://doi.org/10.1108/lhtn-01-2020-0001
3) Andresen, L., Boud, D., & Cohen, R. (2000). Experience-based learning. *Understanding adult education and training*, *2*, 225-239.
4) Bagchi, R., & Cheema, A. (2013). The effect of red background color on willingness-to-pay: The moderating role of selling mechanism. *Journal of Consumer Research*, *39*(5), 947-960.
5) Bartlett, R. L., & King, P. G. (1990). Teaching economics as a laboratory science. *The Journal of Economic Education*, *21*(2), 181-193.
6) Bartunek, J. M. (2007). Academic-practitioner collaboration need not require joint or relevant research: Toward a relational scholarship of integration. *Academy of management journal*, *50*(6), 1323-1333.
7) Bennis, W. G., & O'Toole, J. (2005). How business schools have lost their way. *Harvard business review*, *83*(5), 96-104.
8) Billsberry, J. (2014). The rise and rise of management edutainment.
9) Bloch, P. H. (2011). Product design and marketing: Reflections after fifteen years. *Journal of Product Innovation Management*, *28*(3), 378-380.
10) Bonoma, T. V., & Crittenden, V. L. (1988). Managing marketing implementation. *MIT Sloan Management Review*, *29*(2), 7.
11) Bryman, A. (2012). Social Research Methods (4 ed.). Oxford: Oxford University Press.
12) Bryman, A., Bell, E., & Harley, B. (2018). *Business research methods* (5th ed.). Oxford university press.
13) Burch, G. F., Giambatista, R., Batchelor, J. H., Burch, J. J., Hoover, J. D., & Heller, N. A. (2019). A Meta-Analysis of the Relationship Between Experiential Learning and Learning Outcomes. *Decision Sciences Journal of Innovative Education*, *17*(3), 239-273.
14) BURKE, L., & RAU, B. (2010). The Research-Teaching Gap in Management. *Academy Of Management Learning & Education*, *9*(1), 132-143. https://doi.org/10.5465/amle.2010.48661196

15) Buzzard, C., Crittenden, V. L., Crittenden, W. F., & McCarty, P. (2011). The use of digital technologies in the classroom: A teaching and learning perspective. *Journal of Marketing Education*, *33*(2), 131-139.
16) Cederlund, C. (2014). Think outside the box: managerial relevance and theoretical developments within B2B marketing. *Journal Of Business & Industrial Marketing*, *29*(7/8), 642-651. doi: 10.1108/jbim-11-2013-0245
17) Chaffey, D. (2013). *Emarketing excellence* (4th ed.). London: Routledge.
18) Chapman, C., & Feit, E. (2015). *R for Marketing Research and Analytics*. Springer.
19) Chigbu, U. E. (2019). Visually hypothesising in scientific paper writing: Confirming and refuting qualitative research hypotheses using diagrams. Publications, 7(1), 22.
20) Clayson, D. E., Frost, T. F., & Sheffet, M. J. (2006). Grades and the student evaluation of instruction: A test of the reciprocity effect. *Academy of Management Learning & Education*, *5*(1), 52-65.
21) Crouch, C., Fagen, A., Callan, J., & Mazur, E. (2004). Classroom demonstrations: Learning tools or entertainment?. *American Journal Of Physics*, *72*(6), 835-838. https://doi.org/10.1119/1.1707018
22) Dann, S., & Dann, S. (2011). E-marketing. Basingstoke: Palgrave Macmillan.
23) Davenport, T. (2006). Competing on analytics. *Havard Business Review*.
24) Davis, D. F., Golicic, S. L., & Boerstler, C. N. (2011). Benefits and challenges of conducting multiple methods research in marketing. Journal of the academy of marketing science, 39(3), 467-479.
25) Doyle, P. (1989). Building successful brands: the strategic options. Journal of marketing management, 5(1), 77-95.
26) Di Gregorio, A., Maggioni, I., Mauri, C., & Mazzucchelli, A. (2019). Employability skills for future marketing professionals. *European Management Journal*, *37*(3), 251-258. https://doi.org/10.1016/j.emj.2019.03.004
27) Duit, R. (2007). Science Education ResearchInternationally:Conceptions, Research Methods,Domains of Research. *EURASIA Journal Of Mathematics, Science And Technology Education*, *3*(1). https://doi.org/10.12973/ejmste/75369
28) Edelman, L. F., Manolova, T. S., & Brush, C. G. (2008). Entrepreneurship education: Correspondence between practices of nascent entrepreneurs and textbook prescriptions for success. *Academy of Management Learning & Education*, *7*(1), 56-70.
29) Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. Academy of management journal, 50(1), 25-32.

30) Eisenmann, T. (2013). *Should MBAs Learn to Code?*. Harvard Business Review. Retrieved 21 April 2020, from https://hbr.org/2013/09/should-mbas-learn-to-code.
31) Flannery, M. (2007). Observations on Biology. *The American Biology Teacher*, *69*(9), 561-564. https://doi.org/10.1662/0002-7685(2007)69[561:oob]2.0.co;2
32) Fletcher, R., Bell, J., & McNaughton, R. (2004). *International E-Business Marketing* (1st ed.). Thomson.
33) Fuciu, M., & Dumitrescu, L. (2018). From Marketing 1.0 To Marketing 4.0 – The Evolution of the Marketing Concept in the Context of the 21ST Century. International Conference KNOWLEDGE-BASED ORGANIZATION, 24(2), 43-48. https://doi.org/10.1515/kbo-2018-0064
34) Ghotbifar, F., Marjani, M., & Ramazani, A. (2017). Identifying and assessing the factors affecting skill gap in digital marketing in communication industry companies. *Independent Journal Of Management & Production*, *8*(1), 1-14. https://doi.org/10.14807/ijmp.v8i1.507
35) Ghotkar, M., & Rokde, P. (2016). Big Data: How it is Generated and its Importance. *IOSR Journal Of Computer Engineering (IOSR-JCE)*, 01-05. Retrieved 25 March 2020, from http://www.iosrjournals.org/iosr-jce/papers/conf.15013/Volume%202/1.%2001-05.pdf.
36) Govindarajan, V., & Fisher, J. (1990). Strategy, control systems, and resource sharing: Effects on business-unit performance. Academy of Management journal, 33(2), 259-285.
37) Gonçalves, A. (2017). Metrics. *Social Media Analytics Strategy*, 149-186. https://doi.org/10.1007/978-1-4842-3102-9_11
38) Gorn, G. J., Chattopadhyay, A., Sengupta, J., & Tripathi, S. (2004). Waiting for the web: how screen color affects time perception. *Journal of marketing research*, *41*(2), 215-225.
39) Green, F., & Zhu, Y. (2010). Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. *Oxford economic papers*, *62*(4), 740-763.
40) Hall, A., & Berardino, L. (2006). Teaching professional behaviors: Differences in the perceptions of faculty, students, and employers. *Journal of Business Ethics*, *63*(4), 407-415.
41) Halstead, J. (1989). SOVPLAN: An In-class Simulation of Central Planning. *Economic Inquiry*, *27*(2), 357.

42) Hamill, J., Tagg, S., Stevenson, A., & Vescovi, T. (2010). Special edition–'New developments in online marketing'.
43) Hansen, W. L. (1993). Teaching a writing intensive course in economics. *The Journal of Economic Education*, *24*(3), 213-218.
44) Hemenway, D., Moore, R., & Whitney, J. (1987). The oligopoly game. *Economic Inquiry*, *25*(4), 727.
45) Hattie, J., & Marsh, H. W. (1996). The relationship between research and teaching: A meta-analysis. Review of educational research, 66(4), 507-542.
46) Henríquez Parodi, M., & Alon, I. (2019). Experiential Learning Using Social Media in International Business Education. *The Palgrave Handbook Of Learning And Teaching International Business And Management*, 111-134. https://doi.org/10.1007/978-3-030-20415-0_6
47) Hester, D. D. (1991). Instructional simulation of a commercial banking system. *The Journal of Economic Education*, *22*(2), 111-143.
48) Hinkin, T. R., Holtom, B. C., & Klag, M. (2007). Developing mutually beneficial relationships between researchers and organizations.
49) Hughes, T., Bence, D., Grisoni, L., O'Regan, N. and Wornham, D. (2012). Marketing as an applied science: lessons from other business disciplines. *European Journal of Marketing*, 46(1/2), pp.92-111.
50) Jackson, S. (2015). Cult of analytics: Data analytics for marketing. Routledge.
51) Jantsch, J. (2011). *Duct Tape Marketing Revised And Updated*. Nashville, Tennessee: Thomas Nelson.
52) Järvinen, J., & Karjaluoto, H. (2015). The use of Web analytics for digital marketing performance measurement. *Industrial Marketing Management*, *50*, 117-127.
53) Jones, S., Pergl, R., Hooft, R., Miksa, T., Samors, R., & Ungvari, J. et al. (2020). Data Management Planning: How Requirements and Solutions are Beginning to Converge. *Data Intelligence*, *2*(1-2), 208-219. https://doi.org/10.1162/dint_a_00043
54) Joseph, M., & Saunders, P. (1970). Playing the market game. *Recent research in economics education*, 158-65.
55) Kannan, P., & Li, H. (2017). Digital marketing: A framework, review and research agenda. International Journal Of Research In Marketing, 34(1), 22-45. doi: 10.1016/j.ijresmar.2016.11.006

56) Kaplan, A., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59-68. doi: 10.1016/j.bushor.2009.09.003

57) Keeton, M. T., & Tate, P. J. (Eds.). (1978). *Learning by experience--what, why, how* (No. 1). Jossey-Bass.

58) Kickham-Samy, M. (2013). Worked Examples in Teaching Queries for Searching Academic Databases. Retrieved 1 April 2020, from ProQuest LLC

59) Klassen, T. P., Jadad, A. R., & Moher, D. (1998). Guides for reading and interpreting systematic reviews: I. Getting started. Archives of pediatrics & adolescent medicine, 152(7), 700-704.

60) Koh, Y., Rotgans, J., Rajalingam, P., Gagnon, P., Low-Beer, N. and Schmidt, H. (2019). Effects of graded versus ungraded individual readiness assurance scores in team-based learning: a quasi-experimental study. *Advances in Health Sciences Education*, 24(3), pp.477-488.

61) Kolb, D. (2015). Experiential learning: Experience as the source of learning and development. Pearson Education.

62) Kotler, P., & Armstong, G. (2018). *Principles of marketing - Global edition* (7th ed.). Harlow: Pearson.

63) Kotler, P., Kartajaya, H., & Setiawan, I. (2017). *Marketing 4.0*. Hoboken, New Jersey: Wiley.

64) Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of applied psychology*, *78*(2), 311.

65) Kuper, A., Lingard, L., & Levinson, W. (2008). Critically appraising qualitative research. Bmj, 337.

66) Kurthakoti, R., & Good, D. (2019). Evaluating Outcomes of Experiential Learning: An Overview of Available Approaches. *The Palgrave Handbook Of Learning And Teaching International Business And Management*, 33-61. https://doi.org/10.1007/978-3-030-20415-0_3

67) Küng, L. (2008). Strategic management in the media: Theory to practice. Sage.

68) Labrecque, L., vor dem Esche, J., Mathwick, C., Novak, T., & Hofacker, C. (2013). Consumer Power: Evolution in the Digital Age. *Journal Of Interactive Marketing*, *27*(4), 257-269. doi: 10.1016/j.intmar.2013.09.002

69) Lee, N. Y., Noble, S. M., & Biswas, D. (2018). Hey big spender! A golden (color) atmospheric effect on tipping behavior. *Journal of the Academy of Marketing Science*, *46*(2), 317-337.

70) Leonardi, P., Huysman, M., & Steinfield, C. (2013). Enterprise Social Media: Definition, History, and Prospects for the Study of Social Technologies in Organizations. Journal Of Computer-Mediated Communication, 19(1), 1-19. https://doi.org/10.1111/jcc4.12029

71) Leuthold, J. H. (1993). A free rider experiment for the large class. *The Journal of Economic Education*, *24*(4), 353-363.

72) Levy, P., & Birkner, C. (2011). Digital marketing 2011: What you need to know. *Marketing News*, *45*(3), 10-14.

73) Liu, X., & Burns, A. (2018). Designing a Marketing Analytics Course for the Digital Age. Marketing Education Review, 28(1), 28-40. doi: 10.1080/10528008.2017.1421049

74) Long, T., & Johnson, M. (2000). Rigour, reliability and validity in qualitative research. Clinical effectiveness in nursing, 4(1), 30-37.

75) Loohuis, R. (2019). Exploring Opportunities for Revising Enterprise Education in the International Business Administration program of the University of Twente. Retrieved 20 April 2020

76) Maier, M. H., & Keenan, D. (1994). Teaching tools: Cooperative learning in economics. *Economic Inquiry*, *32*(2), 358-361.

77) Markides, C. (2007). In search of ambidextrous professors. *Academy of Management Journal*, *50*(4), 762-768.

78) Marsh, H., & Hattie, J. (2002). The Relation between Research Productivity and Teaching Effectiveness. *The Journal Of Higher Education*, *73*(5), 603-641. https://doi.org/10.1080/00221546.2002.11777170

79) Martinez, R. (2004). Online education: Designing for the future in appraiser education. *The Appraisal Journal*, *72*(3), 266.

80) Marz, N., & Warren, J. (2015). Big Data: Principles and best practices of scalable realtime data systems. Manning Publications Co..

81) Michaelidou, N., Siamagka, N. T., & Christodoulides, G. (2011). Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial marketing management*, *40*(7), 1153-1159.

82) Mintzberg, H. (2004). Managers, not MBAs: A hard look at the soft practice of managing and management development. Berrett-Koehler Publishers.
83) Moosmayer, D. C. (2012). A model of management academics' intentions to influence values. *Academy of Management Learning & Education*, *11*(2), 155-173.
84) Morgan, N., Clark, B., & Gooner, R. (2002). Marketing productivity, marketing audits, and systems for marketing performance assessment: integrating multiple perspectives. *Journal Of Business Research*, *55*(5), 363-375. https://doi.org/10.1016/s0148-2963(00)00162-4
85) Noble, H., Kelly, D., & Hudson, P. (2013). Experiences of carers supporting dying renal patients managed without dialysis. *Journal of Advanced Nursing*, *69*(8), 1829-1839.
86) Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. Evidence-based nursing, 18(2), 34-35.
87) Offstein, E., & Chory, R. (2016). Breaking Bad in Business Education: Impacts on Student Incivility and Academic Dishonesty. *Business And Professional Communication Quarterly*, *80*(3), 269-295. doi: 10.1177/2329490616671709
88) Ouchi, W. G. (1979). A conceptual framework for the design of organizational control mechanisms. *Management science*, *25*(9), 833-848.
89) Oviatt, B. M., & Miller, W. D. (1989). Irrelevance, intransigence, and business professors. *Academy of Management Perspectives*, *3*(4), 304-312.
90) Petty, R. D. (1997). Advertising law in the United States and European Union. *Journal of Public Policy & Marketing*, *16*(1), 2-13.
91) Pfeffer, J., & Fong, C. T. (2002). The end of business schools? Less success than meets the eye. Academy of management learning & education, 1(1), 78-95.
92) Polonsky, M. J., & Mankelow, G. (2000). Where are we going? Perceptions of US marketing academics. *Journal of Marketing Management*, *16*(7), 717-743.
93) Polonsky, M. J., & Whitelaw, P. (2005). What are we measuring when we evaluate journals?. *Journal of Marketing Education*, *27*(2), 189-201.
94) Pracejus, J. W., O'Guinn, T. C., & Olsen, G. D. (2013). When white space is more than “burning money”: Economic signaling meets visual commercial rhetoric. *International Journal of Research in Marketing*, *30*(3), 211-218.
95) Provost, F., & Fawcett, T. (2013). *Data science for business*. O'Reilly.
96) Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today’s workplace. *Business communication quarterly*, *75*(4), 453-465.

97) Rowley, J. (2008). Understanding digital content marketing. *Journal of marketing management*, *24*(5-6), 517-540.

98) Royle, J., & Laing, A. (2014). The digital marketing skills gap: Developing a Digital Marketer Model for the communication industries. *International Journal Of Information Management*, *34*(2), 65-73. https://doi.org/10.1016/j.ijinfomgt.2013.11.008

99) Rynes, S. L. (2007). Editor's afterword: Let's create a tipping point: What academics and practitioners can do, alone and together. *Academy of Management Journal*, *50*(5), 1046-1054.

100) Rynes, S. L., Bartunek, J. M., & Daft, R. L. (2001). Across the great divide: Knowledge creation and transfer between practitioners and academics. *Academy of management Journal*, *44*(2), 340-355.

101) Rynes, S. L., Giluk, T. L., & Brown, K. G. (2007). The very separate worlds of academic and practitioner periodicals in human resource management: Implications for evidence-based management. *Academy of management journal*, *50*(5), 987-1008.

102) Sample, K., Hagtvedt, H., & Brasel, S. (2019). Components of visual perception in marketing contexts: a conceptual framework and review. *Journal Of The Academy Of Marketing Science*. doi: 10.1007/s11747-019-00684-4

103) Sandelowski, M. (1993). Rigor or rigor mortis: the problem of rigor in qualitative research. Advances in nursing science, 16(2), 1-8.

104) Schaller, T. K. (2018). Field learning: Experiential learning through participant observation and self-reflection of consumer behavior at sporting events. *Marketing Education Review*, *28*(2), 98-103.

105) Schatzberg, L. (2002). Applying Bloom's and Kolb's theories to teaching systems analysis and design. In *The Proceedings of ISECON* (Vol. 19).

106) Schein, E. H. (1990). Organizational culture (Vol. 45, No. 2, p. 109). American Psychological Association.

107) Schibrowsky, J. A., & Lapidus, R. S. (1994). Gaining a competitive advantage by analyzing aggregate complaints. *Journal of Consumer Marketing*.

108) Schlee, R., & Karns, G. (2017). Job Requirements for Marketing Graduates: Are There Differences in the Knowledge, Skills, and Personal Attributes Needed for Different Salary Levels?. *Journal Of Marketing Education*, *39*(2), 69-81. https://doi.org/10.1177/0273475317712765

109) Simpson, E. J. (1972). The classification of learning objectives in the psychomotor domain. *Gryphon House, Washington, DC*.

110) Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *Journal of marketing*, *59*(3), 63-74.

111) Solomon, G. (2007). An examination of entrepreneurship education in the United States. *Journal Of Small Business And Enterprise Development*, *14*(2), 168-182. doi: 10.1108/14626000710746637

112) Stewart, D. W. (2009). The role of method: some parting thoughts from a departing editor. 381.

113) Sulock, J. M. (1990). The free rider and voting paradox “games”. *The Journal of Economic Education*, *21*(1), 65-69.

114) Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. British journal of management, 14(3), 207-222.

115) Trinh, M. P., & Kolb, D. A. (2011). Eastern experiential learning: Eastern principles for learning wholeness. *Career Planning and Adult Development Journal*, *27*(4), 29-43.

116) Vroom, V. H. (2007). On the synergy between research and teaching. *Journal of Management Education*, *31*(3), 365-375.

117) Spitz-Oener, A. (2006). Technical change, job tasks, and rising educational demands: Looking outside the wage structure. *Journal of labor economics*, *24*(2), 235-270.

118) Wedel, M., & Kannan, P. (2016). Marketing Analytics for Data-Rich Environments. *Journal Of Marketing*, *80*(6), 97-121. doi: 10.1509/jm.15.0413

119) Weed, M. (2005, January). " Meta interpretation": A method for the interpretive synthesis of qualitative research. In Forum Qualitative Sozialforschung/Forum: Qualitative Social Research (Vol. 6, No. 1).

120) Weiss, M. A. (2011). The use of social media sites data by business organizations in their relationship with employees. *Journal of Internet Law*, *15*(2), 16-27.

121) Wilkinson, M., Dumontier, M., Aalbersberg, I., Appleton, G., Axton, M., & Baak, A. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, *3*(1). doi: 10.1038/sdata.2016.18

122) Wolters, C., & Daugherty, S. (2007). Goal structures and teachers' sense of efficacy: Their relation and association to teaching experience and academic level. *Journal Of Educational Psychology*, *99*(1), 181-193. https://doi.org/10.1037/0022-0663.99.1.181

123) Wymbs, C. (2011). Digital Marketing: The Time for a New “Academic Major” Has Arrived. *Journal of Marketing Education*, 33(1), 93-106.

124) Yoho, D. L. (1989). Fairmodel: Microcomputer software to teach macroeconomic concepts. *The Journal of Economic Education*, *20*(1), 107-113.

125) Zinkhan, G. M., & Hirschheim, R. (1992). Truth in marketing theory and research: an alternative perspective. *Journal of Marketing*, *56*(2), 80-88.

8. Appendix

8.1. Additional content

Table 13: Design Principles part 1, derived Sample, Hagtvedt and Brasel (2019)

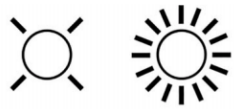
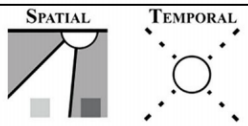
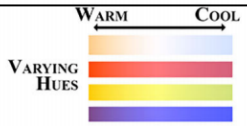
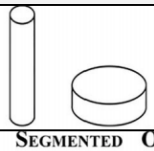
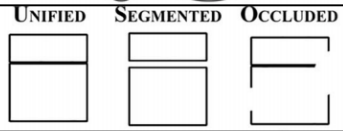
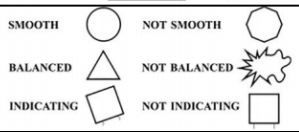
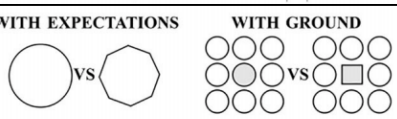
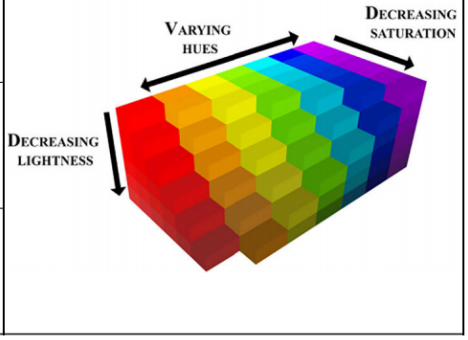
Construct	Definition	Symbolic Representation(s)
I. Illuminance	The amount of light perceived on an object	
1. Brightness	The amount of lumens falling on a surface	
2. Illuminance Contrast	The differences that occur in the perception of light over space and/or time	
3. Directionality	The source of lighting in relation to the location of perception	
4. Illuminance Color	The temperature and hue of perceived light in an environment or projected onto an object	
II. Shape	The perceived space occupied by an object in the perceptual field as comprised by the outer boundaries of that object	
1. Dimensionality	An object's height, width, and/or length	
2. Unity	An object's perceived cohesiveness as allowed by segmentation and occlusion	
3. Demarcation	The outer boundary that contains the entirety of a perceived object	
3. Shape Contrast	The deviation of a perceived object from context or consumer experience	
III. Surface Color	The hue, saturation, and lightness of the perceived exterior layer of an object within the perceptual field	
1. Hue	The facet of a perceived color that allows for classification as red, yellow, blue, or any mixture of these	
2. Saturation	The degree of deviation of a perceived hue from a gray of the same lightness	
3. Lightness	A surface color's range from black to white	

Table 14: Design Principles part 2, derived Sample, Hagtvedt and Brasel (2019)

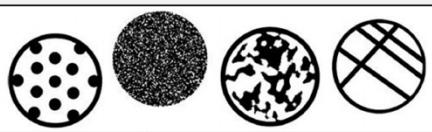
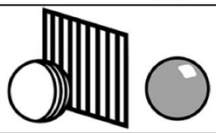
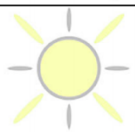
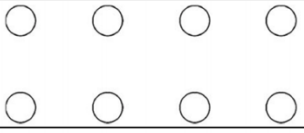
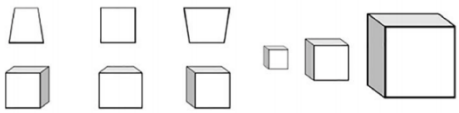
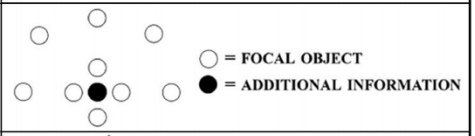
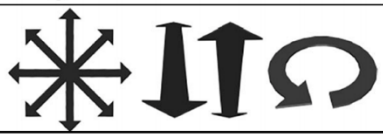
IV. Materiality	The visual texture and reactance of the exterior surface of an object as contained within the shape of that object	
1. Visual Texture	The apparent consistency of a perceived object's surface	
2. Reflectance	An object's propensity to produce an image of the surrounding context on its surface	
3. Opacity	The lack of transparency in an object's surface	
4. Fluorescence	The propensity of an object's surface to emit light through reflection or internal lighting	
V. Location	The positioning, orientation, spacing, and movement of an object in relation to other objects within an area	
1. Positioning	The placement of a figure within the ground or in relation to another object	
2. Orientation	The angle of perception of an object	
3. Spacing	The distance between an intended focal object and additional information	
4. Movement	A change in the location of an object	

Table 15: Teaching tools as proposed by Kurthakoti and Good (2019) retrieved from Kurthakoti and Good (2019)

EL approach	Expected outcomes of EL approach	Tools used for assessment of outcomes	Some considerations
Case studies	• Communication skills • Analytical skills • Decision making • Application skills • Time management skills • Creative skills • Self-analysis skills • Interpersonal skills • Empathizing skills • Pattern recognition	• Written reports • Oral presentation • Facilitated discussion • Case examination • Multiple choice tests • Reflective papers • Quality of class participation	• Assessment can be done—before, during, or after class session • One-time assessment is seldom indicative of learning. Assessment has to be continuous and for extended period of time, preferably across courses • There exists a gap between faculty perception and student perception of the acquisition of the skills through case studies
Simulations and games	• Provide experience of running a business • Decision-making skills • Problem-solving skills • Leadership skills • Expand knowledge • Learn from mistakes • Integrate business functions • Teamwork • Formulate strategy	• Self-reported surveys to assess learning from mistakes • Performance • Struggle • Forecasting accuracy • Student engagement • Ability to operate under constraints • Assessment of student effort • Comprehensive business plan • Executive briefing • Oral presentation • Traditional exams and tests	• Is performance the "correct" measure of learning since learning in simulations does not occur "just in time", but more often "just a bit late" • No direct relationship between performance and learning • Simulations are usually not the most effective way to achieve lower order outcomes of Bloom's taxonomy • Most of the work has been on cognitive and affective learning, very little on behavior
Group projects	• Cultural competencies • Collaboration (local and global) • Communication • Interpersonal skills • Leadership skills and task delegation • Teamwork • Conflict management • Analyze relevant information	• Written reports • Peer evaluation • Presentation • Self-reported scores on surveys • Tests and assignments • Student satisfaction • Reflective papers • Assessment of student effort based on analytics from LMS or other platform used for managing group work	• Are peer evaluations a good measure of assessing learning? • Need an objective way to assess individual effort • Reports and presentations should have easy to understand rubrics • When using peer evaluations, it should be continuous and done multiple times • Peer evaluations should also separate evaluation of team from evaluation of individual team members' competency

EL approach	Expected outcomes of EL approach	Tools used for assessment of outcomes	Some considerations
Internships and service learning	• Integrate knowledge with application • Increase relevance to classroom learning • Interpersonal skills • Teamwork skills • Increase job opportunities • Develop problem-solving skills • Cultural awareness • Attitude toward self civic engagement	• Evaluation by internship coordinator or supervisor • Analytical and reflective papers by students • Self-evaluation reports • Self-reported surveys • Competencies as defined by professional bodies in the field • Tracking student success after graduation • Oral presentations on the content and experience • Better class of degree (GPA) and higher course scores	• Perceptions of core competencies needed for internship success differ between student and employer • Longitudinal and broad-based assessments are better to tease out the transferability of skills across courses
Study abroad and field trips	• Cultural competence • Personal development • Functional/domain knowledge • Language learning • Develop cross-cultural skills	• Standardized scales for pre-post-assessment using self-reported surveys • Tests and exams • Observations • Critical and reflective essays • Journals Presentation	• Scholars believe pre- post-assessment lacks validity • Observation alone is not a good measure, so is self-reported data • Need to use a combination of metrics to assess achievement of outcomes