

***Financially Educating Generation Z Using Digital Media –
A Competitive Field Test of eduStories® Versus Texts***

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Abstract

A good general education on financial topics is required for wise financial decisions and thus also for one's own material financial security. However, according to consistent studies, financial literacy is particularly poor in Generation Z, which is now on the threshold of professional life. Against this background, the question arises as to how financial knowledge can be prepared and presented for Generation Z to arouse the target group's interest in financial topics on the one hand and to enable effective knowledge transfer on the other. This study investigates the potential of two different digital presentation formats for teaching financial education to secondary school students: The so-called eduStories® versus text. eduStories® are digital learning modules that, similar to the story format of Instagram, combine various digital elements such as photos, videos, text and quizzes to explain a financial topic. Both formats contain the same information on a given financial topic to ensure comparability. Two different sub-samples consisting of German 8th and 9th-grade school classes are used to test one of the two formats. The students evaluated their format based on attractiveness, seriousness and comprehensibility criteria. In addition, the respective increase in knowledge through the presented format is measured. The results show that the eduStories® are judged significantly better by the target group than the text: the stories are more entertaining and overall more appealing. However, knowledge creation was similar in both formats, i.e. stories can help arouse interest but have no advantages in actual knowledge transfer.

Keywords: Financial Education, Financial Literacy, Generation Z, eduStories®, Digital Formats

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1. Introduction

A few years ago, a then 17-year-old high school student tweeted: "I'm almost 18 and have no idea about taxes, rent or insurance. But I can write a poem analysis. In four languages." This statement was well-received online and triggered a major debate in Germany about the content of lessons and, in particular, the teaching of financial literacy in schools (Nestler, 2015). Country-level financial literacy ranges from 71% to 13%. With 65%, Germany is one of the countries with the highest financial literacy. Nevertheless, one-third of the population is financially illiterate (Klapper et al, 2015). Econometric models and experiments showed a significant causal impact of financial literacy on economic decision-making (Lusardi & Mitchell, 2014). People with a low level of financial literacy get into debt more quickly and generally have more problems making ends meet. That is why financial literacy is so critical. Financial literacy means solid financial decision-making and effective management of personal finances (Yakoboski, 2022).

Over-indebted younger consumers aged between 18 and 30 have decreased significantly in the long-term comparison 2004 / 2021 (Creditreform Economic Research, 2021). In 2021, 7% of this age group were over-indebted. Nevertheless, this development should be viewed with caution, as the Corona pandemic has brought down the over-indebtedness rate. Corona led to spending caution and an increase in the savings rate. In addition, irrational consumer behavior was limited (Creditreform Economic Research, 2021). Thus, the over-indebtedness rate could rise again in the future. In addition, school curricula still do not include financial education related to young people's daily lives (Breinich-Schilly, 2021). Therefore, it is not surprising that, besides external factors such as divorce, unemployment and illness, internal factors such as uneconomical household management or consumption behaviour are increasingly cited as a cause of financial over-indebtedness (Arndt et al., 2021). Changing payment practices and business practices are being driven by online retailing. Today, there are more and more "buy now, pay later" offers. As a result, the younger generation between 25 and 44 is increasingly turning up at advice centers (Eckert & Zschäpitz, 2021; Arndt et al., 2021). In addition, the German pension reform of 2000/2001 (BGBI, 2001) stipulates that especially young people must provide privately for their old age. Current demographic developments suggest that the German pension system, based on the pay-as-you-go principle, will not guarantee social security in old age in the medium term. Without the private provision, young people will be unable to maintain their living standard in retirement (Brey & Theek, 2022). Therefore, it becomes more crucial for young people to understand financial concepts such as the effects of compound interest or inflation and know what credit and savings options are open to them (Brey & Theek, 2022).

The way knowledge is communicated is more diverse today than ever before. Via the Internet, there are many different tried-and-tested and innovative ways to make content more suitable to various target audiences, given the opportunity to present information in a flexible, interactive and graphic way more easily (OECD, 2021). Since the proportion of young people in Germany who are online and own a smartphone is almost 100% (VuMa, 2020), the target group is easy to reach online. However, due to the overabundance of information on the Internet, it is even more important to attract the attention and interest of the young generation through a targeted approach. The greater the range, the more important the learning content selection, compilation and presentation (Linke, 2020).

This study, therefore, investigates the potential of two different presentation formats for conveying financial knowledge in a field test with 132 subjects. In addition, the acceptance of

the respective learning format is measured. The first presentation format is a classic text. In contrast, eduStories® (<https://www.eduStories.de/>) are tested as an innovative learning format aiming at the interactive transfer of financial knowledge.

1.1 Generation Z and Their Media Behavior

The year of birth as a criterion for belonging to Generation Z is defined differently in the literature. Generally, members born between 1996 and 2010 are classified as Generation Z (Scholz, 2018). While Generation Y (also known as Millennials) was the first digital natives, Generation Z is the first generation to have grown up entirely in a digital age (see Figure 1) (Marron, 2015).

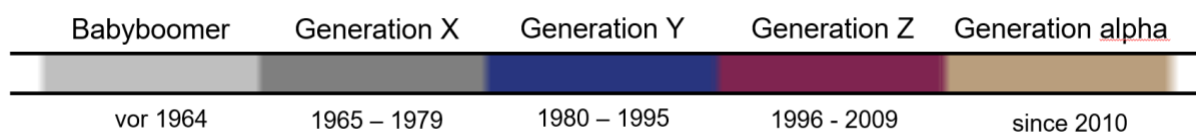


Figure 1: Overview of generations over time

Source: Kleinjohann Reinecke, 2020

The members of Generation Z are so-called social media natives. They were born into an already digitized world and have grown up with smartphones and social media (Kleinjohann & Reinecke, 2020). These social media, such as WhatsApp, Instagram, Snapchat, TikTok, Pinterest, Facebook or Twitch are an integral part of their everyday lives and form the basis of all social interactions (Feierabend et al., 2021; ARD ZDF Onlinestudie, 2021). They see social media as an access point for information of any kind (Newman et al. 2020: 13). In particular, they prefer reduced content due to visualization and the extensive avoidance of detailed texts (Vázquez-Herrero et al., 2019). Social media stories on Whatsapp, Instagram, Snapchat, and Facebook are inherently rich in visual components and text-reduced (Vázquez-Herrero et al., 2019).

On average, young people spend almost 8.5 hours a day consuming media (Breunig et al., 2020). If the parallel use of different media in the sense of second screens is taken into account, this even results in a daily gross usage time of 10.5 hours (Breunig et al., 2020). Only around 2.5 hours of this are spent with offline media such as TV, radio and print (Breunig et al., 2020). This high level of internet use sets the young generation apart from its predecessors (Kupferschmitt & Müller, 2020). Most young people say they use the Internet to maintain social contacts (96%), and in second place they use the Internet for entertainment purposes, such as video streaming, music or video games. However, it is notable that 71% say they use the Internet at least once a day to search for information of any kind (Shell, 2019).

The fear of poverty in old age (Wolfert & Schneekloth, 2019) prompts the vast majority of Generation Z (around 85% of all 17- to 27-year-olds) to build savings. They prefer safe forms of investment (e.g., savings accounts, call money accounts), which are losing value overall due to the ongoing zero interest rate phase and taking inflation into account, which is becoming more and more of a serious problem (Wolfert & Schneekloth, 2019). In general, young people still rely far too often on recommendations from their social environment instead of valid information (Hurrelmann et al., 2019). Thus, financial literacy is a relevant factor in minimizing irrational financial decisions.

1.2 Generation Z and Financial Literacy

By financial literacy, we mean the ability to process the information on economic and financial contexts and incorporate it into well-founded decisions; particularly concerning financial planning, asset accumulation, debt and retirement provision (Lusardi & Mitchell, 2014). The required knowledge and skills presuppose an understanding of basic economic concepts (Klapper et al., 2015).

Three questions have been developed in the literature, which are commonly used in surveys worldwide as a valid instrument to measure financial literacy. This is why we based our study on these questions. The so-called "Big Three" deal with knowledge of interest rates, inflation, and possibilities of risk diversification (Lusardi & Mitchell, 2011; Lusardi & Mitchell 2014). Other topics for mapping financial knowledge include the time value of money, money illusion (Van Rooij et al., 2011), and compound interest and debt (Schmidt & Panagiota, 2017).

Even in highly developed countries like Germany, financial literacy is at a considerable level. Only about two-thirds of Germans are financially literate (OECD, 2021; Klapper et al., 2015). Accordingly, more than half of Generation Z feel that their financial literacy is insufficient regarding investing, taxes or retirement planning (Schnitzer, 2019). For example, 25% of those under 25 cannot explain the term share. More or less 50% cannot explain call money, overdraft, liquidity, DAX, bond, yield and fund. A complete 87% cannot do anything with the term ETF (Comdirect, 2019). Therefore, both science and politics see an urgent need for action to increase financial literacy (Klapper et al., 2015). Thus, the industry-funded study by Comdirect found that almost 92% of people under 25 would like "financial literacy" to be a compulsory or at least an elective subject at school (Comdirect, 2019).

2. Learning theory

Numerous different learning theories describe under which conditions individuals learn best. Looking at common approaches, many of them (Mayer, 2005; Sweller, 2005) are based on the "less is more" principle (Dwyer, 1972). The background of this principle is that the working memory should not be overloaded (Butcher, 2006; Moreno & Mayer, 2004).

The Corona pandemic has forced multimedia learning further into the foreground (Grein, 2021b). Surveys make it clear that the future will be more digital (Rabe & Falkenberg, 2020; Jäckel, 2020). It has been shown that both the participants' learning success and motivation depend on the teaching process's implementation (Ersch, 2021; Grein, 2021a). It is assumed that learning success is more likely the more sensory channels are addressed in the learner. Multimedia presentation formats should motivate and enable learners with different learning styles to study according to their preferences. Essential components of multimedia learning are design, audio, images, a combination of pictures and text, and moving images such as animations, videos, and simulations (Niegemann et al., 2008). In addition, interaction with technology motivates the learner and promotes enjoyment, allowing tasks to be completed more efficiently and effectively (Wegener et al., 2011; Schrader & Niegemann, 2007).

When searching for information on financial topics, the young generation attaches particular importance to relevant content and a credible and user-friendly form of presentation that helps them gain a good overview of a particular topic (Heinemann et al., 2020). It should be noted that the receptivity of young people has been reduced. The information must be easily

digestible and, in the best case, offered in "small bites" within a good structure (Firnkes, 2012). Furthermore, Generation Z is living with a bombardment of information throughout their lives, so their attention span is only 6 seconds (Swanson & Davis, 2020).

2.1 Digital learning formats: eduStories®

EduStories® are digital learning modules with a playful character, aiming to support young people in acquiring financial skills and understanding economic contexts better. The focus is on the interactive transfer of competencies. Interactivity is to be achieved by using stories from social media such as Instagram or TikTok. This is because young people already heavily use social media to inform themselves (Newman et al., 2021; Hölig et al., 2021). Reduced and visualized content can make young people feel directly addressed, facilitate access to the content, and make it intuitively usable for them (Vásquez-Herrero et al., 2019).

The tasks and information within the eduStories® are structured as interactive questions with emojis and sliders. The goal is to arouse curiosity and motivate young people to learn. EduStories® can be worked on independently, and the processing time is 10 to 15 minutes, depending on the topic. After a short introduction to the topic, the provision of new knowledge follows. Transfer and reflection are part of the learning module. Within a learning module, there are different types of tasks (see Figure 2).



Figure 2: Screenshot eduStories®

Source: <https://www.eduStories.de/digitale-lernmodule>

2.2 Analog learning formats: Texts

According to the research objective, eduStories® will be contrasted with texts as a classic learning format. The Hamburger comprehensibility concept was developed to make texts easy to understand for learners, which describes four different characteristics (Langer et al., 2006).

1. **Simplicity:** Simplicity, as the most essential characteristic, refers to forming short sentences and using common words. Foreign words or technical terms should be explained. Complicated presentations would unnecessarily burden the working memory, so the "less is more" principle also applies to texts (Dwyer, 1972). In addition, the personalization principle can help increase learning performance (Robinson, 2004; Moreno & Mayer, 2004). This means addressing the learner personally with "you" instead of a formal address.
2. **Structure - order:** Texts should be structured as well as possible. Texts should have a comprehensible "red thread" and be presented by means of headings, preliminary remarks,

highlighting (bold print, underlining), numbering, marginal notes and a conclusion (Mautone & Mayer, 2007; Naumann et al., 2007).

3. **Brevity - conciseness:** Texts should not be concise and not limited to the essential, but should also not be too longwinded. For best learning results, a reasonable middle ground should be found (Langer et al., 2006):

4. **Stimulating additions:** Provided the text is well structured, extras can contribute to comprehension and promote motivation. However, additions such as interesting digressions, exclamations, and questions that are intended to stimulate thinking should be used sparingly (Langer et al., 2006). Other research, however, takes the view that interesting material that is not relevant for comprehension should not be used at all, as this facilitates the process of filtering out the essential information from the learning material (Mayer & Moreno, 2003).

Online texts should also consider that users do not read texts on the web; they often just skim the pages. Long pages tend to be scrolled, not read. Users prefer facts and reject a strongly promotional style. Therefore, the text should be concise, well-structured, and written objectively (Morkes & Nielsen, 1997).

3. Objective of this study

As already described, only about two-thirds of Germans are financially literate (Klapper et al., 2015), meaning there is a great need to impart knowledge on finance. In this research, we aim to find out how the manner in which complex content, i.e. financial topics, is prepared and presented favours recipients' learning motivation and success. The related research question is to what extent are text or videos better attracting the attention of the young target group and achieving learning success in terms of financial topics. To determine which learning format is perceived more positively and has a better learning effect, we present the results of an experimental design in different school classes of the same grade level (secondary school). In every class, one format (eduStory® or text) was assessed, both providing the same information about a financial topic.

4. Hypotheses

One of the biggest challenges faculty will face with Generation Z students is how to engage them (Fromm & Read, 2018; McNally & Stagliano, 2018; Mohr & Mohr, 2017; Twenge, 2017). Through the mix of different formats, i.e. audiovisual and interactive elements, eduStories® try to animate learning and transfer knowledge. Thus, a higher motivation of eduStories® compared to texts can be expected, leading to higher efficiency in knowledge transfer. This is based on the Cognitive Load Theory, which states that interaction in learning leads to a more successful learning process (Sweller, 2014). Furthermore, the theory advocates the "less is more" idea in the design of learning materials (Dwyer, 1972). Following this idea, a working memory, which is free from unnecessary burden, results in a higher learning performance (Butcher, 2006; Moreno & Mayer, 2004). eduStories® aim to follow this approach.

In contrast, in our study texts are the classic learning format, which still plays a central role in teaching and learning. We assume that both learning formats, eduStories® and texts, are suitable for successfully conveying financial knowledge. Learning processes occur when new information is actively processed (Richtberg & Girwidz, 2018). Our first two hypotheses follow from this:

- H1a: Embedding content in a story with interactive and audiovisual elements as given in eduStories® lead to better test results in the final knowledge quiz than texts.
- H1b: Embedding content in a story with interactive and audiovisual elements as given in eduStories® are better understandable for the user than pure texts.

It can also be concluded that members of Generation Z perceive eduStories® more positively as a learning format. For most of Generation Z, the possibility of interaction plays a major role in media consumption for information purposes (Hamari & Kolvisto, 2015). Young people of Generation Z also consume Stories on and also use social media to search for information (Newman et al., 2021). From this, we derive our second hypothesis:

- H2a: The presentation form of eduStories® is perceived as more attractive to young people of Generation Z than pure texts.
- H2b: The presentation form of eduStories® is perceived as more entertaining than pure texts to young people than pure texts.

5. Method

In order to compare the attractiveness and learning effect of the two forms of presentation among young people, a quantitative survey in the form of a standardized questionnaire was chosen. Four different sets of questionnaires were created (see Table 1).

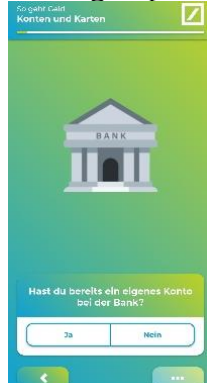
Topic	Texts n=68 ; 50.4%	eduStory® n=67 ; 49.6%
Accounts & Cards	Test group A 	Test group B 
Loans & Financing	Test group C 	Test group D 

Table 1: Research design

Source: own representation & <https://www.eduStories.de/digitale-lernmodule>

The test subjects were students from six different classes and three different schools in Baden-Württemberg. The paper & pencil survey took place from 15.10.2021 to 29.10.2021, in which a total of 135 students in the 8th or 9th grade were interviewed. There were a total of two different sections. The first block of topics, "Accounts & Cards," included sections on types of accounts, online banking: TAN procedures, advantages & disadvantages, cards and payment methods. The second block of topics, "Loans & Financing," covered sections on loans, creditworthiness and Schufa, types of loans, debt traps and overindebtedness.

In Step 1, a school class was assigned to a topic block. In Step 2, the students of this class were randomly assigned to a presentation form (text or eduStory®). Both forms of presentation, eduStory® and text, had the same content, which should only lead to increased knowledge via the different forms of expression. Consequently, it can be assumed that only the form of presentation influences attractiveness and effectiveness.

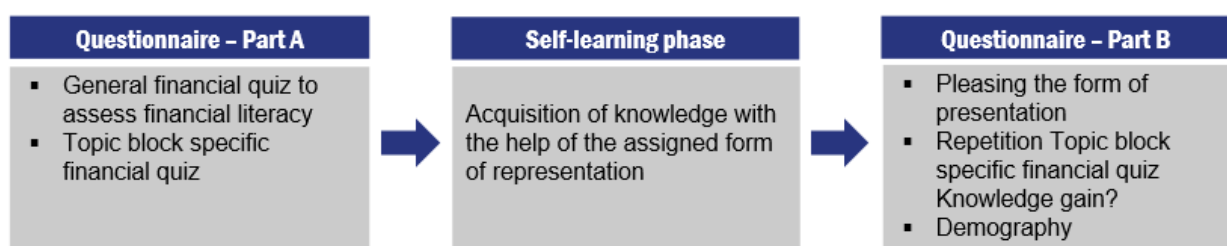


Figure 3: Structure of the questionnaire
Source: own representation

The structure of the questionnaire is shown in Figure 3. In part A of the questionnaire, financial literacy was surveyed to rule out the level of general financial knowledge as a cause for the degree of knowledge gain. Additionally, we wanted to determine which form of presentation works better for youth with/without prior knowledge. Furthermore, knowledge specific to the topic block (accounts & cards; loans & financing) was tested. In doing so, content that is taught in the learning format was tested in advance. This part forms the reference point for determining the increase in knowledge. In the self-study phase, students had time to learn about the topic block within their assigned presentation format (text or eduStory®). Part B of the questionnaire first asked which aspects of the learning format were perceived as good and which were bad. Comprehensibility, entertainment value, independence/neutrality of the learning format were also surveyed. For eduStories®, we expanded the set of questions to find out how they could be optimized. Therefore, the respondents also had to evaluate the use of audiovisual content and the use of different interactive elements (single choice, multiple choice, open questions with text input, etc.). Finally, the topic-specific financial quiz was repeated to determine what and how much the students had learned.

6. Results

6.1 Sample Structure

Of the 135 survey participants, 81.4% were attending 8th grade and 18.6% were attending 9th grade at the time of the survey. Thus, the participants were between 13 and 16 years old. The majority of respondents, 73.3%, were 13 years old. In terms of gender, 53.3% were male and 44.4% were female (2.2% abstained). 72.6% of the respondents aspire to graduate from high school, 27.1% intend to graduate from secondary school.

6.2 Financial Literacy & Financial quiz

At the beginning of the survey, respondents had to answer five financial questions to test their general financial knowledge. This revealed that only 17.8% of respondents were financially literate, meaning they could answer at least four of the five finance questions correctly. 80% of the respondents indicated that they turn to their parents for help with financial issues. Almost every fifth student would use Google for questions on financial topics.

The distribution in the four different groups was more or less equal (see table 2). 68 students were shown texts as a form of presentation (accounts and cards: 37; loans and financing: 31) 67 students were shown eduStories® as a form of presentation (accounts and cards: 36, loans and financing: 31).

[illegible]

Table 2: Test group allocation

Source: own representation & <https://www.eduStories.de/digitale-lernmodule>

6.3 Knowledge creation

At the beginning of the survey, the students were asked a topic-specific financial quiz with seven questions. On average, the students answered 2.49 questions correctly (eduStories® group: $\bar{X}$ 2.52; text group: $\bar{X}$ 2.46).

After the learning phase, students in the eduStories® test group were able to answer an average of 4.43 questions correctly, while students in the text group were able to give an

average of 4.72 correct answers. Due to the small number of cases, the differences between the two groups are not significant ($p=0.279$). Also, the differences between the individual topics are rather small. On average, two more questions could be answered correctly (see table 3).

Presentation Form	Text		edustory®		Text	edustory®
	Before Learning Phase	After learning phase	Before Learning Phase	After learning phase	Knowledge creation	
Accounts & Cards	n=37 2.59	n=37 4.86	n=36 2.72	n=36 4.78	+ 2.27	+ 2.06
Loans & Financing	n=31 2.29	n=37 4.55	n=31 2.29	n=31 4.03	+ 2.26	+ 1.74
Total	n=68 2.46	n=68 4.72	n=67 2.52	n=67 4.43	+ 2.26	+ 1.91

Table 3: Knowledge gained after learning phase

Source: own representation

6.4 Performance of texts versus eduStories®

Overall, the students like eduStories® significantly and clearly better. EduStories® are perceived as significantly more entertaining, and despite the identical content to texts, the students see a higher relation to their everyday life. It is also surprising that the students perceive the eduStories® as significantly more neutral and independent. The content was equally comprehensible in both the texts and the eduStories®. The content also seemed relevant to the respondents, meaning that the questions they had on the respective topic were addressed. The fact that eduStories® are better received is also reflected in the probability of reuse and recommendation. Significantly more students would recommend eduStories® to a friend (see Table 4).

eduStories® vs text rating	Text Mean value	EduStory® Mean value
Favour Overall**	3.37	4.18
Understanding	3.65	3.77
Neutrality*	3.18	3.80
Entertainment***	2.62	3.62
Relevance of content	3.38	3.62
Relevance to everyday life**	2.41	3.06
Probability of reuse	3.21	3.51
Probability of recommendation***	2.54	3.22

Table 4: Performance of texts versus eduStories®

Source: own representation (agreement of mapped criteria; scale: 1 ("Do not agree at all") to 5 ("Fully agree")); $n(\text{eduStory}®) = 56$, $n(\text{text}) = 57$; Shown here: Mean values. $*p < 0.05$. $**p < 0.01$, $***p < 0.001$.)

The option of freely evaluating both forms of presentation also reflects that eduStories® left a more favourable impression on respondents. Slightly more than half of the respondents gave positive comments on the text, while two-thirds gave positive feedback on eduStories®. The text is perceived as particularly understandable, clear and detailed. EduStories® score with the interactive quiz elements and, similar to the text, with comprehensibility. Almost one in two people gave the text a negative rating, compared with only one in three for the eduStories®. The main criticism of the text was the level of detail and the lack of visuals to prevent people from getting bored while learning. Too much text and too few visualizations are the most significant criticism points in the eduStories®.

6.5 Detailed evaluation of eduStories®

Based on a rating scale (1 = "too little"; 3 = "just right"; 5= "too much"), we examined some elements of the eduStories® more closely. Overall, the use of the queried elements of the eduStories® is perceived as just right. This includes the photos, graphics and animations shown, open-ended questions, length of audiovisual content and quizzes. The overall length of the two learning units was felt to be too long. On the other hand, the number of audiovisual elements should be increased somewhat (see Fig. 6).

eduStories® rating	Mean value (MV)	Standard deviation (SD)
The total length of the learning unit.	3.37	0.876
Duration/length of spoken texts, background music, sound effects.	2.92	1.005
Photos, graphics, animations	2.88	0.893
Open questions with text input	2.88	1.053
Quiz questions for ticking	2.72	0.761
Frequency of spoken texts, background music, sound effects	2.48	1.017

Table 5: Detailed evaluation of the eduStories®
Source: own representation (How do you rate the use of the following elements?"; scale: 1 ("Too little") to 5 ("Too much"); n = 65)

7. Discussion

7.1 Knowledge creation

As expected, the general financial knowledge of the students was at a low level. In line with our common assumption, both forms of presentation are suitable for conveying knowledge. The respondents were able to answer two more questions correctly after the learning unit. The number of "Don't know" uncertainties also decreased by almost 70% for both forms of presentation. However, we did not find a significant difference in knowledge creation between the two forms of presentation. Thus, we have to reject our first hypothesis (Embedding content in a story with interactive and audiovisual elements as given in eduStories® lead to better test results in the final knowledge quiz than texts.).

We also cannot confirm our second hypothesis (Embedding content in a story with interactive and audiovisual elements as given in eduStories® are better understandable for the user than

pure texts.). Indeed, the results for understanding (I was able to understand all the content well.) for eduStories® (MV=3.77; SD.=1.035) were on a slightly higher level than for texts (MV=3.65; SD=1.004). However, these differences were not significant due to the small number of cases.

7.2 Performance of eduStories® vs. texts

All in all, the students rated the eduStories® more positively than pure texts. Thus, our hypothesis (the presentation form of eduStories® appeals to young people of Generation Z better than pure texts) for the liking of eduStories® is true.

The entertainment value of the eduStories® is also at a significantly higher level than that of the texts, thus confirming our hypothesis (the presentation form of the eduStories® entertains young people of Generation Z better than pure texts).

7.3 Evaluation of the results

The eduStories® were not able to contribute to a higher level of knowledge formation, as assumed, but they were able to achieve roughly the same results as the texts. Although eduStories® have audiovisual and interactive elements, it became clear in the open responses that the students would have liked less text and more videos. For future surveys, stories that are intended to impart knowledge could be made even more interactive and contain even shorter information units to increase the favour even more.

The fact that the learning outcomes in our study were very similar can also be explained by the fact that the content of the given financial topics was possibly quite simple. This explains why both texts and eduStories® were perceived as comprehensible and why we did not find any significant differences. It is conceivable that in the case of more complex (financial) topics, the motivation for the respective learning format is the decisive factor for learning success. Due to the positive perception, eduStories® could lead to higher motivation and thus increase the will to learn for future learning units, because motivational processes play a significant role for learning success (Taylor et al., 1997). Future surveys could therefore slightly increase the complexity of the content.

8. Conclusion

Numerous studies have shown significant deficits in general financial education (Klapper et al., 2015). This also became clear in our survey. Especially for Generation Z in Germany, financial topics have a reputation of being boring and difficult to access. Therefore, it is important to get young people interested and present the topic that creates motivation for learning. In our survey, we examined two different forms of presentations intended to familiarize 8th and 9th grade students with specific financial topics. We chose texts as the classic presentation format, in contrast to which we placed eduStories® as an innovative presentation format. Both formats were used and evaluated separately. It has been shown that both formats contribute significantly to knowledge creation. While an average of 2.5 out of 7 questions were answered correctly before a learning unit, ~4.5 correct answers were given after the 15-minute self-learning phase.

Knowledge creation was similar for both formats, and we could not find any significant differences. However, we did find significant differences in the final evaluation of both

formats. EduStories® were rated better than texts across five dimensions (favour overall, neutrality, entertainment, relevance to everyday life, probability of recommendation). The recommendation probability was also significantly higher with the eduStories® than with the texts. We therefore assume that innovative forms of presentation, such as the eduStories®, have the potential to motivate young people and help them to deal with difficult or “boring” topics.

Based on our results, there are indications of how stories can be optimized to enable higher learning motivation and possibly also learning success. The texts within the eduStories® can be shortened and users demand more audiovisual elements. The users also wanted an increase in the number of quiz questions. The increase of interactive elements should not increase the length of a learning unit, in the best case even rather be kept somewhat shorter, since the human brain has only a limited amount of processing and a time-limited recording capacity (Sweller, 2009).

9. Limitations of the survey

One should remember that the learning phase took place in a school class during class time, i.e. in a familiar learning environment. Therefore, it can be assumed that the concentration on the learning unit and the corresponding form of presentation were higher than in free time because the students had to deal with the content and were not distracted by e.g. other media or more interesting contents. In other environments, the motivation to read and understand a text is presumably lower.

It is also interesting that eduStories® is perceived by the students as significantly more neutral or independent, even though the company's logo (Deutsche Bank) is clearly visible in the bar at the top right. Possible explanations for the perceived neutrality are that the students did not recognize the logo as such, since it was inserted into the eduStories® in color, or that the Deutsche Bank logo is not sufficiently well-known in the corresponding age group. Otherwise it is conceivable that it behaves exactly the other way around and Deutsche Bank as the sender is a well-known brand that conveys a high level of trust in the accuracy and neutrality of the content. Through the videos shown, the eduStories® got a face to the authorship, which could have additionally promoted the trust. Further research should also be ascertained whether the sender was noticed or known.

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