

## ORIGINAL ARTICLE

# Development and evaluation of a digital education tool for medical students in wound care

Mischa Schlupeck<sup>1</sup> | Birgit Stubner<sup>2</sup> | Cornelia Erfurt-Berge<sup>1</sup> 

<sup>1</sup>Department of Dermatology, Friedrich-Alexander-University (FAU) Erlangen-Nuremberg and Universitätsklinikum Erlangen, Erlangen, Germany

<sup>2</sup>Department of Media Didactics and E-Learning, Office of Student Affairs of the Medical Faculty, Friedrich-Alexander University (FAU) Erlangen-Nuremberg, Erlangen, Germany

## Correspondence

PD Dr. med. habil. Cornelia Erfurt-Berge, Department of Dermatology, University Hospital Erlangen, Ulmenweg 18, 91054 Erlangen, Germany.  
Email: cornelia.erfurt-berge@uk-erlangen.de

## Funding information

Bundesministerium für Bildung und Forschung, Grant/Award Number: 01PL17017

## Abstract

The aim of this study was to develop and evaluate an interactive, video-enhanced, and case-based online course for medical students. We chose a case about wound care since this topic is still underrepresented in the medical curriculum. First, instructional videos were created to teach practical skills in wound care. These were implemented into a case-based online course, using the online learning platform ILIAS. In a comparative initial and final survey, numbers of users were assessed, content and structure of the course, as well as the thematic interest of the students and self-assessed gain of competence, were evaluated. Since the summer of 2019, 310 students have successfully completed the course. The survey data showed a high participation rate and a positive response regarding the content as well as the structural concept. Most of the students rated the content within the course as useful for their future medical work (86.1%) and the gain of knowledge superior to a traditional lecture (69.4%). Self-assessments of video-mediated skills showed a significant increase in subjectively perceived competence. The online course is an efficient way to reach many students by the small use of resources. It resembles an option to arouse growing interest in wound care in medical students.

## KEYWORDS

digital education, health care, medical students, practical skills, wound care

## 1 | INTRODUCTION

In 2012 the prevalence of a chronic wound among the German population was 1.04%.<sup>1</sup> Prevalence values of 11.5% for chronic wounds among patients in the care of a nursing service even exceed this rate significantly.<sup>2</sup> However, wound care is so far only little-represented within the curriculum of medical studies in Germany. At the same time, deficits in

diagnostics and therapeutic supply for patients with chronic wounds are observed. As investigations at a German wound centre showed, it took an average of 17.5 months from initial manifestation until patients with chronic venous leg ulcers presented to a specialised wound outpatient clinic.<sup>3</sup> By the time of initial presentation at our wound centre, 38% of patients with chronic wounds had not received complete basic diagnostics.<sup>4</sup>

The topic of chronic wounds has so far been represented in small parts of lectures in surgery, internal medicine, and dermatology at the author's university, mainly

[Correction added on, after first online publication: Projekt Deal funding statement has been added.]

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2020 The Authors. *International Wound Journal* published by Medicalhelplines.com Inc (3M) and John Wiley & Sons Ltd.

with a focus on differential diagnosis. For dermatology, the teaching, which is oriented towards special diagnostics and therapy, consisted of only one single lecture in the curriculum. This is due to the large variety of dermatological topics to be discussed in one semester. Accordingly, students in the 8.-12. semester rated their level of knowledge as low in a first survey. At the same time, however, there was a desire for practically-oriented knowledge, specifically in wound care.<sup>5</sup>

The implementation of a revised medical curriculum in Germany called “Master Plan Medical Studies 2020” also requires new competence-oriented and digital teaching concepts.<sup>6</sup> In addition, the development of digital learning content has become a high priority due to the current restrictions on university teaching in Germany and large parts of the world because of the COVID 19 pandemic. Among the digital teaching methods, the use of interactive case studies in combination with instructional videos offers a promising opportunity to familiarise the students with skills and train clinical thinking in addition to existing classroom teaching or to bridge periods of absence. The aim of this study was to stimulate the students' interest in wound care by developing an interactive, video-based, and case-based concept for an online course on the care of chronic wounds. We evaluated the numbers of users, the content and structure, the thematic interest of the students, as well as the self-perceived level of competence. The assessed data should provide a general orientation for the development of other digital learning modules for wound care education in other groups of healthcare professionals or students.

## 2 | MATERIALS AND METHODS

### 2.1 | Creating instructional videos

The instructional videos used in the course were produced in cooperation with the Institute for Teaching Innovation at the author's university, following recommendations for the use of videos in teaching.<sup>7-10</sup> In this way, instructional videos of approximately 5 minutes were produced, demonstrating the correct measurement and interpretation of the ankle-brachial pressure index (ABI) and the application of a compression bandage.

### 2.2 | Creating the learning module and workflow

The online course was created as a voluntary offer for those who wanted to learn more about chronic wounds

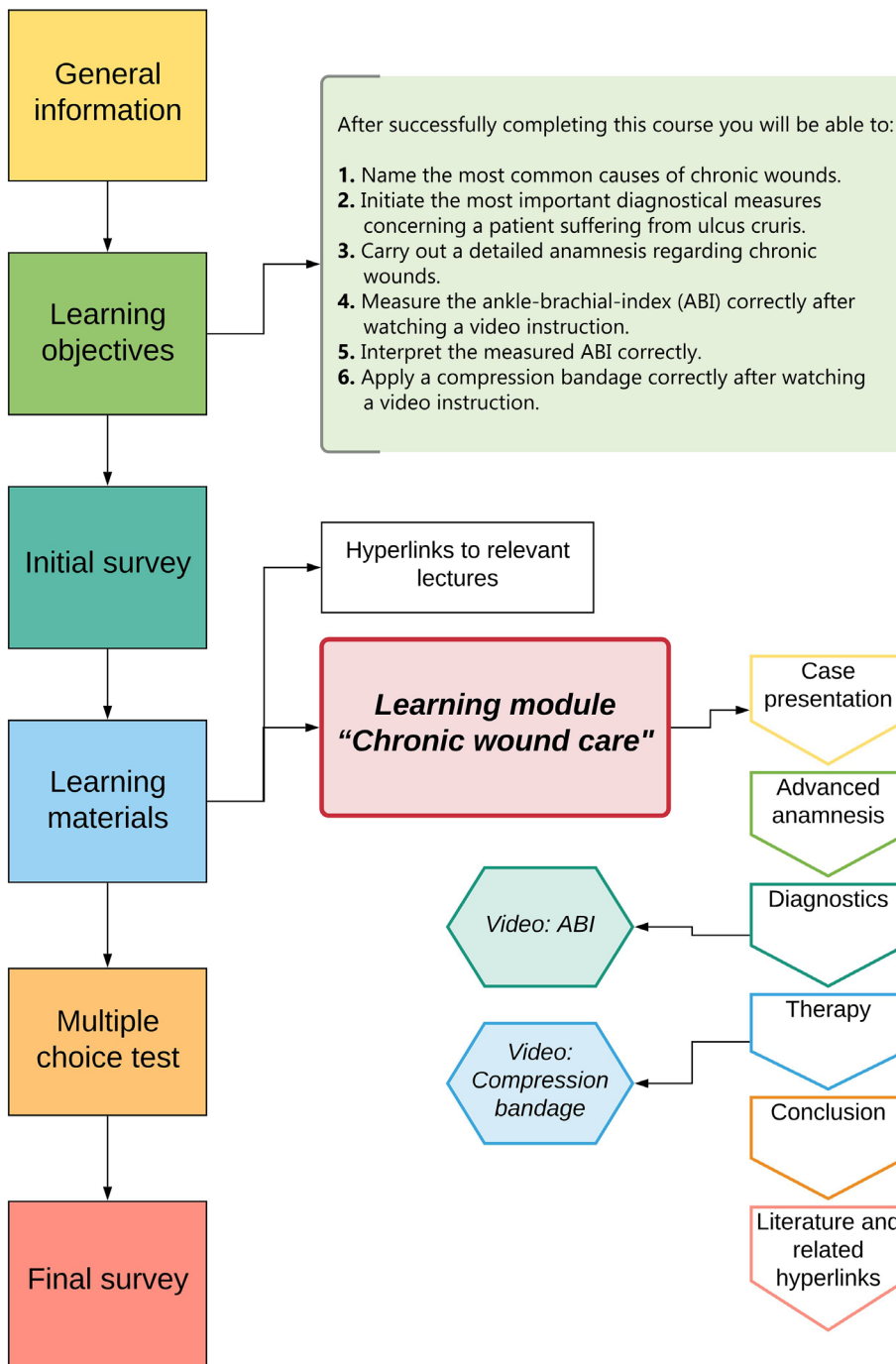
### Key Messages

- knowledge about wound care is poor among medical students, while there is a desire to learn about practical skills
- in our study, we implemented a case-based online course about wound care in the medical curriculum and evaluated the acceptance as well as the self-perceived level of competence
- the online course about wound care was highly appreciated by the medical students and will be extended, especially because of the importance of digital teaching solutions during the current pandemic. It will also be offered to other health care professions

in an interactive way after hearing the corresponding lecture in the classroom. The “Learning Module: Chronic Wounds” was realised using the digital learning platform “StudOn,” based on the open-source software ILIAS 5.3. The course content was subdivided into six sections. The completion of each section led to the activation of the next (Figure 1).

Besides the learning module, there were thematically relevant lecture notes provided in the course section “Learning materials.” In addition, learning objectives were formulated according to the recommendations of the German Rectors' Conference.<sup>11</sup> A comparative initial and final survey and a short multiple-choice test for self-monitoring the acquisition of essential knowledge was implemented. To attract more students to the course, and thus increase the size of the evaluable data set, a bonus point was awarded in the final dermatology exam for the completion of the course. The average time required processing the course was estimated to be 30 to 45 minutes.

The learning module was designed with a focus on the most frequent causes of chronic wounds and under consideration of the catalogue of the learning objectives of the German Dermatological Society.<sup>12,13</sup> To achieve practice-oriented learning, the module was developed as an interactive and realistic case study. It is based on the constructed case of an aged patient with an initial diagnosis of a chronic venous leg ulcer. The virtual working environment is a family doctor's practice. In individual chapters, the students are guided from case presentation to taking the patient's medical history, results of physical examination, and multidisciplinary diagnostics to targeted therapy. Each chapter contains tasks in which



**FIGURE 1** Contents and sequence of the course

the learners, in their role as general practitioners, make decisions for the further care of the patient. For all tasks, sample solutions are provided for subsequent self-learning-control. In between these tasks, informative sections convey the most important relevant knowledge for the respective chapters. The previously described instructional videos about determining the ABI and applying a compression bandage are integrated into the chapters Diagnostics and Therapy (Figures 1 and 2). To test themselves, the participants thereafter worked on the before mentioned multiple-choice test containing questions

about differential diagnosis, ABI measurement, and interpretation, as well as indication for compression therapy. It could be performed multiple times until reaching the pass mark of at least 60%.

### 2.3 | Evaluation of the course

The evaluation of the course was carried out in the beginning and after completion of the course using a digital survey. Unless otherwise stated, the questions were rated

- Lerneinheit Chronische Wunde
  - ▶ ● 1 Fallvorstellung
  - ▶ ● 2 Weiterführende Anamnese
  - ▶ ● 3 Diagnostik
  - ▼ ● 4 Therapie
    - Basistherapie
    - Video
  - ▶ ● 5 Zusammenfassung
  - ▶ ● 6 Literatur und weiterführende Links



**FIGURE 2** Screenshot showing the video-based course section on how to apply a compression bandage. The section is further divided into single teaching steps like case data, anamnesis, diagnostics, results, and therapy. Videos for the practical skills are implemented in the course

on a five-level Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). The initial survey examined whether the participants were confident that they could independently measure an ABI correctly and apply a compression bandage. In the more detailed final evaluation, a renewed assessment of self-perceived competence in those practical skills was carried out. In addition, the overall impression of the course and the interest generated by the course concerning the topic of chronic wounds was determined, each in a score summarised from three questions. In some cases, questions previously described in academic literature were used for this.<sup>14</sup> Furthermore, the subjectively perceived learning success in comparison to a traditional lecture was assessed by the participants and whether the content was useful for their work as a future doctor. In addition to social data, such as age and gender, to provide an overview and support the evaluation, the duration of the course was determined.

## 2.4 | Statistical analysis

The statistical analysis of the data was carried out in the software SPSS 26. The group comparison in the initial and final survey was accomplished by Mann–Whitney test. The internal consistency of the questions for determining the overall impression and thematic interest was evaluated based on Cronbach's Alpha. The descriptive data show absolute and relative frequencies, standard deviation (SD), median or arithmetic mean, as well as first and third quartiles (Q1, Q3).

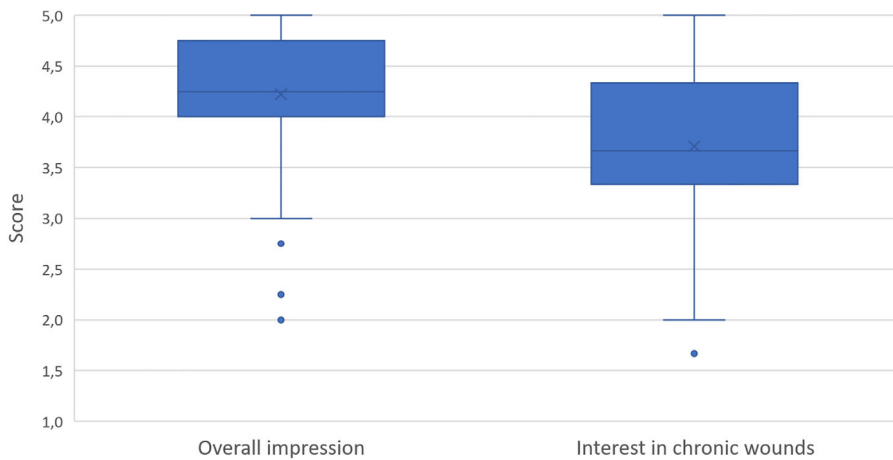
## 3 | RESULTS

### 3.1 | Participants

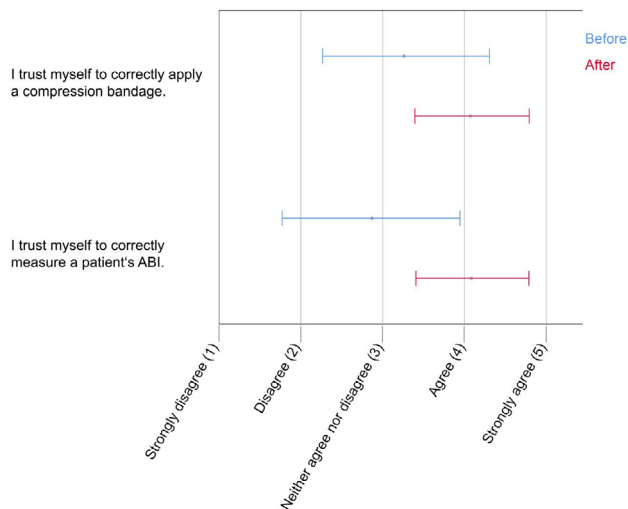
In the summer semester 2019 and winter semester 2019/2020, a total of 323 students of medicine participated in the newly developed learning module for the treatment of chronic wounds. Of these, 310 (178 female, 117 male, 3 diverse) completed the course completely (96%). The course unit was offered contemporaneously with the dermatology lecture (regular in the 8th semester). Eighty-two percent of students who attended the classical lecture finalised the online course. The average processing time of the course was 37 ( $\pm 12.9$ ) minutes.

### 3.2 | Rating of the educational course by the participants

In the final survey, the overall impression of the content and structure of the course was rated on average 4.2 (Q1: 4; Q3: 4.75) on a scale of one to five (Figure 3). With a value of 0.789 for Cronbach's alpha, the internal consistency can be considered "good." The generated interest in the topic of chronic wounds was rated on average 3.7 (Q1 3.3; Q3 4.3) after the course. The reliability analysis achieved a value of 0.695 for Cronbach's alpha, which is considered "acceptable."



**FIGURE 3** Final evaluation of general impression and gained interest in the topic of chronic wounds based on digital questionnaires using the Likert scale. (The value of one corresponds to complete rejection in every question. The value of five corresponds to complete agreement)



**FIGURE 4** The students' self-assessment (measured on a Likert scale before and after completing the course) on their confidence in performing the taught skills by themselves. The figure shows 25% quartile (Q1) and 75% quartile (Q3), as well as the arithmetic mean

### 3.3 | Learning outcome

In the multiple-choice test at the end of the tutorial, 73% of the participants reached the pass mark of >60% correct answers at the first attempt. The initial and after completion of the course measured subjective perception of the participants' competence in practical skills (ABI measurement and application of a compression bandage) showed a significant increase after the course participation (Figure 4). For both skills, Mann-Whitney test calculated values of the asymptotic significance of less than 0.05. The effect strength reached a medium-high to high value for the ABI measurement with  $r = 0.49$  and a medium-high value for the application of a compression bandage with  $r = 0.34$ . On average, the students assessed their perceived competence in the ABI measurement before

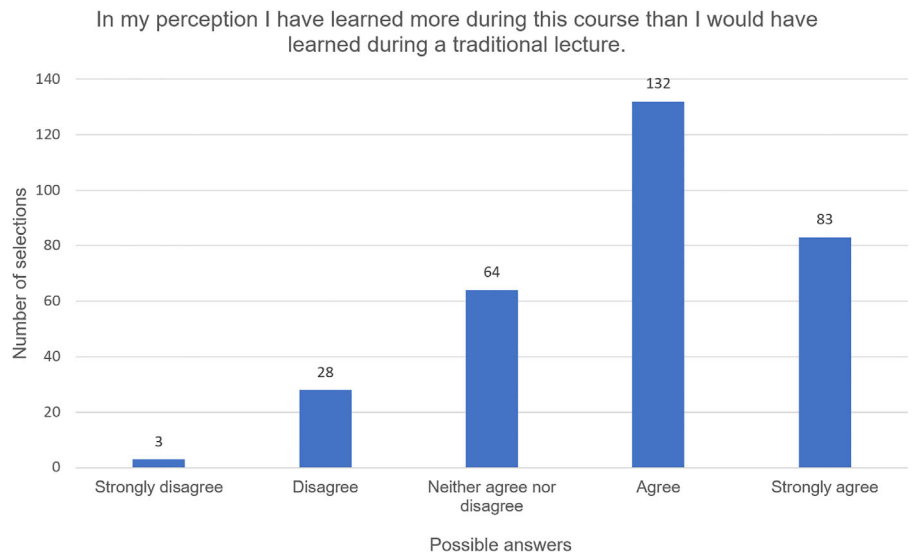
the course with 2.87 (SD 1.22) and after the course with 4.08 (SD 0.82). Regarding the task of applying a compression bandage, the students estimated their competence before the course higher compared to the ABI measurement. The average value was 3.26 (SD 1.20) before the course and 4.07 (SD 0.84) after the course. In fact, these values reflect the subjective self-evaluation by the students without verification of the actual practical skills.

A total of 69.4% of the participants stated that they had learned more by the online course than in a traditional lecture (Figure 5). 86.1% agreed that the content learned was helpful for their work as a future doctor (Figure 6).

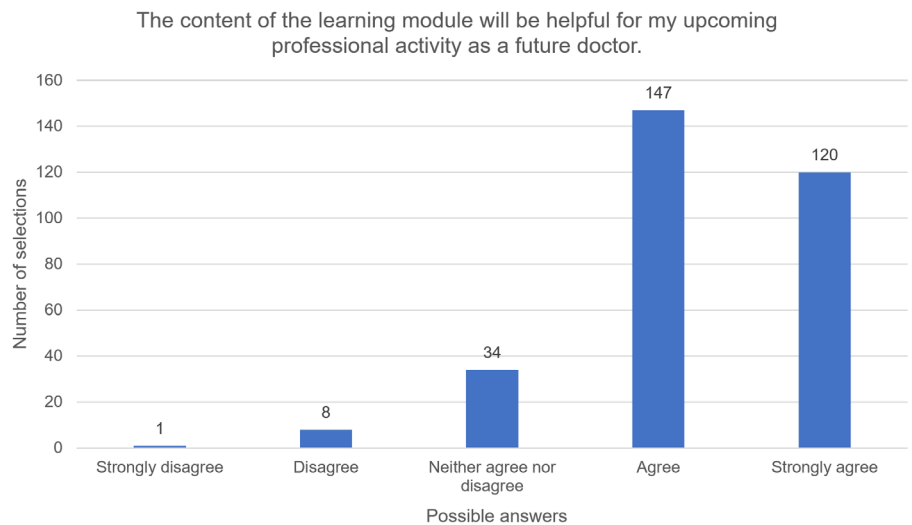
## 4 | DISCUSSION

As the prevalence rates for chronic wounds prove, they are a relevant medical problem not only in Germany, especially in the older population.<sup>1,2</sup> In addition, the care for these patients is particularly expensive. In a German study, annual treatment costs an average of approx. 9600 €, were determined for patients with the diagnosis of venous leg ulcer.<sup>15</sup> Early and efficient care is, therefore, of great importance both for the quality of life of patients and for reducing treatment costs. The general practitioner represents an important key factor in setting the course of diagnostics and treatment. Nevertheless, current data show that many patients do not receive adequate basic diagnostics and effective treatments, such as compression therapy for chronic venous insufficiency are often not used.<sup>4,16</sup> Studies show that wound patients usually consult general practitioners or other doctors in outpatient care. Only 10% of the patients choose a specialised wound outpatient clinic.<sup>3</sup> In order to respond to the observed deficits in care, it, therefore, seems sensible to provide all prospective physicians with basic skills

**FIGURE 5** Distribution of answers to the question about learning success during the course compared to a traditional lecture (n = 310)



**FIGURE 6** Distribution of answers to the question about the usefulness of the course for students' upcoming professional activity as a future doctor (n = 310)



in wound care already during their studies and to bring wound care into focus for them and their future career.

Yet, this topic is being underrepresented in medical studies of most universities. At the authors' university, there were no structured courses for the teaching of basic practical contents of wound care (ABI measurement, compression therapy) before. An American study also showed a lack of structured courses on chronic wounds in 43 of 50 medical faculties. It revealed that students wished for courses on this topic, too.<sup>17</sup> The recommendations of the "Expert Council Master Plan 2020" on the future curriculum in medical studies in Germany attribute a core aspect of modern medical education to digitisation.<sup>6</sup> In addition, the authors describe competence-based medical education as an essential component of the Master Plan.<sup>6</sup> On this basis, the idea of creating a digital, competence-based course, including multimedia and interactive elements, was born to sensitise medical students for specified wound care topics.

The use of an online learning format benefits from some obvious strengths, which become particularly clear in the face of currently limited classroom teaching during the pandemic. Flexibility in space and time for processing the contents and the possibility to work on the subject individually according to one's own interests, as well as the personal working speed, represent advantages of online learning and teaching. Another advantage is that larger groups of learners can be addressed with less personnel effort than in conventional courses. Furthermore, evaluation data of several online course formats for medical education in the English-speaking world showed an equal increase of knowledge compared to classical learning methods in a partly shorter time, as well as a preference of learners for digital courses.<sup>18-20</sup> More important than the underlying technology, however, seemed to be the content and structure of the course concept for achieving positive feedback by the participants.<sup>20</sup> This was

consistent with the assumption that a learner-centred development approach would be more beneficial than a technology-centred approach to creating digital courses.<sup>21</sup>

Consequently, the emphasis was placed on aligning the course content with the level of knowledge of the students that could realistically be expected. Just as important was the idea to link existing theoretical knowledge, for example from the lecture attended in parallel, with practical clinical thinking. The data collected during the course confirmed the abovementioned results of previous work.<sup>18-20</sup> As the user numbers of two semesters showed, the course was very well received by the students. Most of the students showed a preference for the online course compared to a traditional lecture. The positive effects of the conception along the learner-centred approach were displayed in the high evaluation score measuring the overall impression, including the content as well as the structural and didactic design of the course. The high proportion of participants passing the multiple-choice test in the first attempt can also be an indicator for a stimulating course design. The generated interest in the topic of chronic wounds also achieved a positive score, which can be an additional indicator for the successful implementation of the course. It can be assumed that many students only worked on the course because of the provided bonus point. This might be a reason why the generated interest in chronic wounds received a lower score than the overall impression.

In studies, the use of visual media offered demonstrable advantages over purely verbal instructions, especially in the teaching of practical skills. The effective use of visual media generated more attention, could simplify abstract language concepts, and convey more information per time, which was also remembered longer.<sup>22</sup> Since visual media can be preferably used in dermatological teaching, this represents a further advantage of the use of online educational tools in dermatology and the diagnosis of rare causes for chronic wounds. For the use and design of short, concise instructional videos in medical education, recommendations from various authors exist.<sup>7,8</sup> In an American study, instructional videos were used to teach first-year students how to conduct a structured patient examination. The introduction of the video curriculum led to a significant improvement in the students' examination performance.<sup>23</sup> In a further study, the introduction of video instructions for the correct performance of lumbar punctures in a paediatric emergency room increased the self-confidence of the doctors performing them.<sup>24</sup> In addition, the results of a Norwegian study indicated that perceived competence could have a positive impact on future intentions.<sup>25</sup> The data assessed in our study also showed that the self-perceived

competence regarding simple practical skills, such as ABI measurement and application of a compression bandage, could be significantly increased by watching short instructional videos. However, this might represent a limitation of the chosen teaching method where the students may be over-confident after watching one single video tutorial and by underestimating the difficulty of the task. The data obtained can only be indicators for the basic usefulness of the implementation of this and similar online courses. The high number of participants can also be partly explained by the extrinsic motivation of a bonus point. Nevertheless, this online teaching method is also highly appreciated by the students during the current restrictions caused by the COVID-19 pandemic. Yet, only subjective assessments were collected during the course. This also applies to the comparative assessment of learning success between lecture and online courses. Many students felt that the online course was more successful than a lecture. However, there were few objectifiable possibilities for comparison due to the different content focus of the two teaching concepts. As the data collected during this study showed, many students were confident that they could apply a compression bandage correctly even before the course was completed. Still, the actual competence to apply a compression bandage with sufficient pressure must be critically questioned. It is unlikely that by a single online tutorial the students would be able to apply compression correctly. Therefore, a future study goal is to determine the extent of actual, objectifiable improvement of practical skills in the field of wound care by watching instructional videos. It would be interesting to compare this with the data of a recent publication, which showed that compression bandages were only rarely (12.6%) applied with the correct compression pressure, even by specially trained medical personnel.<sup>26</sup> In this future trial, we plan to conduct a practical session with a cohort of students to compare their actual skill acquisition after the video tutorial versus personal instruction. This study will hopefully be realisable in a post-pandemic era when face-to-face teaching will be possible again. One assumption that could be tested is that multi-perspective videos allow a more precise perception of action than direct viewing under practical conditions. The analysis of the long-term effect of the online course on the students' basic knowledge of wound care is also a goal of future studies.

#### 4.1 | Prospects

Due to the positive evaluations of this unit, designed as a pilot course, the development of further course units in the field of wound care teaching has started. Online

material with short video sequences and learning units has been developed for diagnostics with an emphasis on allergology and rare wound causes, use of different wound dressings, and other topics. The knowledge gained was also effectively used to create further digital, video-supported courses as a short-term replacement for the classical classroom teaching during the COVID-19 pandemic. In the long term, the development of case-based learning modules for many subjects of wound care education is possible. Particularly, the use of these online learning units in blended learning formats that is supportive in combination with the classroom lecture, seems very suitable for the efficient transfer of practically applicable knowledge. Furthermore, the course concept offers the possibility for exchange and further development of digital teaching in cooperation with other faculties and universities or within different healthcare professions.

### ACKNOWLEDGEMENTS

The development of the educational tool is part of the project QuiS II, TP08. It is funded as part of the “Bundesländer-Programm Qualitätspakt Lehre” by the Federal Ministry of Education and Research (funding number 01PL17017). The authors assume responsibility for the content of this publication. The present work was performed in the fulfillment of the requirements for obtaining the degree “Dr. med.” of Mr Schlupeck at the Friedrich-Alexander University Erlangen-Nuremberg. Open access funding enabled and organized by Projekt DEAL.

### CONFLICT OF INTEREST

The authors declare no conflict of interest.

### DATA AVAILABILITY STATEMENT

Submitted prior to policy change

### ORCID

Cornelia Erfurt-Berge  <https://orcid.org/0000-0002-3722-6383>

### REFERENCES

- Heyer K, Herberger K, Protz K, Glaeske G, Augustin M. Epidemiology of chronic wounds in Germany: analysis of statutory health insurance data. *Wound Repair Regen.* 2016;24:434-442.
- Raeder K, Strube-Lahmann S, Müller-Werdan U, Kottner J, Lahmann NA, Suhr R. Prävalenz und Einflussfaktoren von chronischen Wunden bei Klienten von ambulanten Pflegediensten in Deutschland. *Z Evid Fortbild Qual Gesundheitswes.* 2019;140:14-21.
- Stoffels-Weindorf M, von der Stück H, Klode J, Dissemmond J. Versorgungswege von Patienten mit chronischen Wunden in Deutschland. *Phlebologie.* 2013;42:183-188.
- Michler M, Renner R, Erfurt-Berge C. Der Versorgungszustand von Patienten mit chronischen Wunden bei Erstvorstellung in einem universitären Wundzentrum, *submitted for publication.*
- Bergendahl L, Werner F, Schmidt A, Ronicke M, Renner R, Erfurt-Berge C. Development and evaluation of an inter-professional teaching concept for modern wound management. *J Dtsch Dermatol Ges.* 2020. <https://doi.org/10.1111/ddg.14230>.
- Wissenschaftsrat. Neustrukturierung des Medizinstudiums und Änderung der Approbationsordnung für Ärzte - Empfehlungen der Expertenkommission zum Masterplan Medizinstudium 2020. 2018. [https://www.wissenschaftsrat.de/download/archiv/7271-18.pdf;jsessionid=46A8566D08FE0214221CEB409457BC78.delivery1-master?\\_\\_blob=publicationFile&v=1](https://www.wissenschaftsrat.de/download/archiv/7271-18.pdf;jsessionid=46A8566D08FE0214221CEB409457BC78.delivery1-master?__blob=publicationFile&v=1). Accessed February 27, 2020.
- Hurtubise L, Martin B, Gilliland A, Mahan J. To play or not to play: leveraging video in medical education. *J Grad Med Educ.* 2013;5:13-18.
- Dong C, Goh PS. Twelve tips for the effective use of videos in medical education. *Med Teach.* 2015;37:140-145.
- Krämer A, Böhrs S. How do consumers evaluate explainer videos? An empirical study on the effectiveness and efficiency of different explainer video formats. *JEL.* 2016;6:254.
- Rüsseler M, Sterz J, Kalozoumi-Paisi P, et al. Qualitätssicherung in der Lehre – Entwicklung und Analyse von Checklisten zur Beurteilung von Lehrvideos zum Erlernen praktischer Fertigkeiten. *Zentralbl Chir.* 2017;142:32-38.
- Gröbblinghoff F. Lernergebnisse praktisch formulieren. *Nexus—Impulse für Die Praxis.* 2015;2015:1-8.
- Ochsendorf F, Bandholz T, Emmert S, et al. 111 Top-Lernziele Dermatologie: Lernzielkatalog für Haut- und Geschlechtskrankheiten der Deutschen Dermatologischen Gesellschaft. *J Dtsch Dermatol Ges.* 2016;14:637-643.
- Dissemmond J, Kröger K. *Chronische Wunden.* Munich, Germany: Elsevier; 2020.
- Deschler S. *Multimediale Lernumgebungen im Weiterbildungsbereich einer Bundesbehörde: Einschätzung der Akzeptanz, Motivation und des Lernerfolgs einer videobasierten und textbasierten Lernumgebung.* Berlin, Germany: Logos-Verl; 2007.
- Purwins S, Herberger K, Debus ES, et al. Cost-of-illness of chronic leg ulcers in Germany. *Int Wound J.* 2010;7:97-102.
- Heyer K, Protz K, Glaeske G, Augustin M. Epidemiology and use of compression treatment in venous leg ulcers: nationwide claims data analysis in Germany. *Int Wound J.* 2017;14:338-343.
- Yim E, Sinha V, Diaz SI, Kirsner RS, Salgado CJ. Wound healing in US medical school curricula. *Wound Repair Regen.* 2014;22:467-472.
- Cook DA, Dupras DM, Thompson WG, Pankratz VS. Web-based Learning in residents' continuity clinics: a randomized, controlled trial. *Acad Med.* 2005;80:90-97.
- Bell DS, Fonarow GC, Hays RD, Mangione CM. Self-study from Web-based and printed guideline materials: a randomized, controlled trial among resident physicians. *Ann Intern Med.* 2000;132:938-946.
- Chumley-Jones HS, Dobbie A, Alford L. Web-based Learning C. Sound educational method or hype? A review of the evaluation literature. *Acad Med.* 2002;77:86-93.



21. Mayer RE, ed. *The Cambridge Handbook of Multimedia Learning*. New York, NY: Cambridge University Press; 2014 (Cambridge Handbooks in Psychology).
22. Wileman RE. *Visual Communicating*. Englewood Cliffs, NJ: Educational Technology Publications; 1993.
23. Orientale E, Kosowicz L, Alerte A, et al. Using web-based video to enhance physical examination skills in medical students. *Fam Med*. 2008;40:471-476.
24. Srivastava G, Roddy M, Langsam D, Agrawal D. An educational video improves technique in performance of pediatric lumbar punctures. *Pediatr Emerg Care*. 2012;28:12-16.
25. Erdvik IB, Øverby NC, Haugen T. Students' self-determined motivation in physical education and intention to be physically active after graduation: the role of perceived competence and identity. *JPES*. 2014;14:232-241.
26. Heyer K, Protz K, Augustin M. Compression therapy - cross-sectional observational survey about knowledge and practical treatment of specialised and non-specialised nurses and therapists. *Int Wound J*. 2017;14:1148-1153.

**How to cite this article:** Schlupeck M, Stubner B, Erfurt-Berge C. Development and evaluation of a digital education tool for medical students in wound care. *Int Wound J*. 2021;18:8-16. <https://doi.org/10.1111/iwj.13498>