Adaptive Learning for Improving German-Speaking Skills in the Digital Age

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Abstract. Language teaching has developed with the support of techniques, media, and learning approaches that complement each other. However, the need to develop linguistic skills never arrest and need to be improved continuously. One of the models developed in the early 21st century is adaptive learning, but this learning tends to be more widely applied outside of language teaching. Therefore, This study aims to find concrete forms of adaptive learning that can be applied in appropriately developing speaking skills in German. A qualitative, descriptive approach is employed in this study, focusing on an inductive inquiry into phenomena and fact-finding on adaptive learning. The learning source employed in the learning is a coursebook called *Netzwerk Deutsch als Fremdsprache.*To bridge the rigidity of the content and the less flexible learning aspects delivered by the coursebook, we tried to integrate it with the campus internal learning management system Besmart-Moodle. There were 12 students (initials P1-12) who participated in learning and practising speaking-oriented learning. We collected data using video recordings, digital questionnaires and field notes. Afterwards, we analyzed participants' conduct and responses using coding procedures to formulate categories relevant to adaptive learning forms. The results showed that most participants viewed this learning positively, and it supported improving their speaking skills effectively. In addition, for both students and lecturers, this learning model thoroughly impacted the learning process concerning certain linguistic facets and enriched previous research.

Keywords: *Adaptive learning, German, Speaking Skills, Digital Learning, Besmart*

https://ojs.unm.ac.id/eralingua

INTRODUCTION

The digital era brings a new trend in providing learning resources managed by an online computing system to deliver learning content quickly and massively. This technical support results in an easy, exciting and interactive way to deliver learning resources (Abdurahimovna, 2020; Yap, 2016). In a specific context, the presence of a Moodle-based learning management system called *Besmart* is a new way within the Yogyakarta State University to optimize the use of information technology in learning activities (Alfina & Irfan, 2020). Nevertheless, if we talk in the context of learning German, we realise that internet technology and digital learning systems have not been so prominent formally (Grein, 2021). German language learning tends to be oriented towards printed resources such as course books and exercise books. The practice of learning German at universities in Indonesia shows that the coursebook called *Netzwerk Deutsch als Fremdsprache* is more popular than other learning resources (Irawati & Saksono, 2019). However, *Netzwerk* has not been able to guarantee proper learning because the learning content does not always match the situation and needs of the learner (Permatawati et al., 2020). The coursebook with this inherent curriculum often leads the teaching team to follow the contents and flow. Therefore, the learning process often does not precisely accord with language competencies intended by the learning plan in higher education. Lecturers need to adjust learning resources and media to the needs of learners in a planned manner. This capacity to creatively and integrally adapt learning objectives and content is called adaptive teaching. On the other hand, the ability of learners to complete exercises with different linguistic aspects and be supported flexibly can also be interpreted as adaptive learning. Furthermore, adaptive systems are also needed to adapt learning materials, teaching methods and learner models (Nguyen & Do, 2008).

In a previous study, Wang et al. (2020) proposed a further investigation into the use and impact of adaptive learning systems in foreign languages. Brühwiler & Blatchford (2011) implied that adaptive learning increases student achievement effectiveness in the learning process by considering the effect of class size. In addition, Karsam & Agustina (2018) suggested adapting the content and learning media taken from the coursebook *Netzwerk* in an appropriate and relevant manner. However, the focus of previous research tends not to be directly related to the context of learning German at the higher education level and has not provided a clear sight of the ideal form of adaptation of learning resources purposed for improving speaking skills. Therefore, this research is essential to propose realistic actions and close the gap of previous research. The most crucial objective of this study is to answer the questions: What concrete forms of adaptive learning can be applied to improve speaking skills? To what extent can *Besmart* digital media and *Netzwerk* textbooks support the adaptive learning process?

LITERATUR REVIEW

Adaptive learning & its urgency

Adaptive learning is a way to change learning practices by improving the quality of teaching through a variety of experiences, relevant contexts and meaningful learning activities (Liu et al., 2017). This learning aims to adapt the learning experience by making changes dynamically, based on interactions and input provided by the learner (Somyürek, 2015). Adaptive behaviour allows teachers to develop learning models based on learners' knowledge, characteristics, and capacities (Vanbecelaere et al., 2020). It has been proven in general that mastery of speaking in a foreign language takes place better through a participatory process, exploration of adapted materials and a lively learning atmosphere (Wloka & Winiwarter, 2021). Conversely, lessons that only follow the textbook directions at each step by default tend to create bland, less exciting and less improving learning. In this case, lecturers need to adapt to develop the quality of learning so that lesson content can be delivered optimally and achievements can be adjusted to what the learners need (Morze et al., 2021). Adaptive learning based on proper planning can improve language skills and become an appropriate method for each task, and learning needs to enable learners to attain their goals (Beck et al., 2007). That means adaptive teaching focuses on the needs, opportunities, and capacity building of learners adequately.

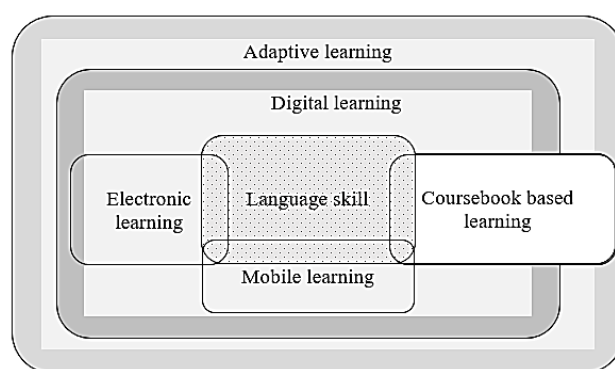**_Netzwerk_ and its potential for adaptive learning**

The coursebook _Netzwerk Deutsch als Fremdsprache_ by Dengler et al. (2013) is a learning source that offers the concept of multimedia-based German language learning because the learning content presented by the book is often connected to digital media, which is presented in a varied order. The scope of linguistic qualifications in this coursebook covers basic language skills from level A1 (elementary) to B1 (advanced). Physically, this coursebook is published in a learning package containing a complement exercise book and a textbook for each language level accompanied by various supporting components in audio and video materials. Methodically, this book offers a variety of approaches in order to activate learners through a variety of learning activities (Pilaski & Wirth, 2012). The student learning experience is mainly inseparable from the printed coursebook-based exercises and in-class activities with their learning community (Bikowski & Casal, 2018).

On the other hand, not all media offered by _Netzwerk_ are relevant to tasks that support language competence but tend to provide insight into the target language's culture (Karsam & Agustina, 2018). Relatively simple learning content should not take much time and support complex media. Innovation in presenting media should be applied to complex tasks and exercises based on the required language skills. The potential for adaptive learning emerges in this critical gap, where lecturers need to look for other possibilities to present the focus of the material effectively and sensitively to the situation. At this point, _Netzwerk_ opens up opportunities for lecturers and learners to make essential learning adaptations. The adaptation of the coursebook allows for two advantages. First, learning with this learning model creates a dynamic classroom atmosphere. Second, adaptive learning

stimulates teachers' skills in varying the material independently, planned and according to time to achieve learning targets effectively (Rösler & Würffel, 2014).

Integrated Digital Learning Resources and Media

There is no doubt that digital media has supported learning in almost all disciplines. Conceptually, Basak et al. (2018) described digital learning (D-Learning) as a comprehensive concept, which includes electronic learning (E-Learning) and mobile learning (*M*-Learning) supported by the internet. However, coursebook-based learning should still receive attention and not be seen as a separate learning medium. Hidayat et al. (2019) argued that coursebooks are a source and a beneficial learning medium for improving literacy skills knowledge and developing learner attitudes. Therefore, integration between media is a fundamental consideration that can be preserved to develop language competence.

Picture 1. The Concept Of Integral Media Relations Designed For Language Learning In An Adaptive Learning Framework

We propose a new concept to media relations based on the model introduced by Basak et al. (2018). This concept depicts that lecturers can effectively integrate coursebook-based learning (CB-learning) with D-learning, E-learning, and M-learning and propose adaptive learning as an adequate model. Course books that have been seen as components outside the learning system should receive balanced attention, and they still have an essential role in supporting language skills. To optimally process these learning resources and media, lecturers can use adaptive learning as a learning framework that allows learners to interact dynamically, interactively and independently with the content (Kerr, 2015).

Besmart and consideration of learning dimensions

A learning management system (LMS) called Moodle tends to be the most widely used in distance learning. It is open-source software with a large community of around 200 million users worldwide (Murillo et al., 2021). Moodle as a digital medium presents an excellent opportunity to apply adaptive learning (Shchedrina et al., 2021). At Yogyakarta State University, the Moodle LMS called *Besmart* is a system that supports lecturers in internet-based learning management. The delivery of learning materials through this platform is integral and reaches the target

students, but it also effectively helps the assessment and reflection of lectures (Jati et al., 2020).

Graf (2007) suggested four learning dimensions that need to be considered necessary in setting up an LMS. First, lecturers need to consider the dimensions of active and reflective learning. Active learners like learning by doing something and being directly involved in an enthusiastic atmosphere. In addition, they are interested in discussions and study in groups to explain the problems they face and reconstruct answers together. It is different from reflective learners who learn by processing learning materials individually and reflecting independently.

Second, lecturers should view the sequential and global dimensions as necessary. The main characteristic of sequential learners is learning in linear steps with a linear increase in complexity. They like the focused guidance and learning path that has been determined in lectures. On the other hand, global learners tend to want the freedom to explore learning content in Moodle independently.

Third, the sensory and intuitive dimensions also need adequate attention. Sensory learners prefer to study concrete material, such as discussing data or presenting real examples. In contrast, intuitive learners prefer to study abstract material, such as concepts and theories that are not directly related to reality.

Fourth, the consideration of verbal and visual dimensions also has an essential meaning. Verbal learners prefer to learn from words, so they like exercises that enhance two-way communication with others. On the other hand, visual learners like to learn through examples of expressions or conversations they see. Therefore, sentences presented with pictures, graphics, and illustrations are very suitable.

Speaking as part of communicative competence

One of the essential language competencies is speaking skills. Learning to speak is not just about articulating words but also expressing ideas, thoughts, and feelings to others verbally, both face to face and long-distance (Tenri et al., 2017). More than that, speaking means presenting knowledge about the rules of language in spoken form and showing language attitudes in a social environment correctly (Xolmurodova, 2021). Thus, speaking skills become the focus of development in the language learning curriculum. Even constructivists view communicative action as a fundamental and priority position in language competence (Reichertz, 2017). Less skilled learners in speaking a foreign language cause them difficulty expressing ideas, and they tend to be neglected in the international social community (Tridinanti, 2018). Improving speaking skills should focus on learning grammar and consider a communicative approach. Thus, learners can communicate in German independently, communicatively and flexibly (Nurhaliza & Anwar, 2019). Therefore, learners need to involve themselves in concrete communication situations and apply foreign languages as a means of speaking, not just placing language as knowledge (Staffeldt & Ott, 2020). This way of thinking does not mean ignoring the urgency of language structure because we do not deny that grammatical errors can also interfere with communication and hinder understanding (Albino, 2017).

The theoretical review above can draw meaningful relationships between learning media and adaptive learning to develop speech skills. Researchers and

practitioners agree that adaptive learning has a strong basis for consideration. However, recent research still has limited aspects, as stated in the introduction. Qualitatively oriented studies can pave the way for identifying new ways of improving learning where adaptive learning finds appropriate implementation space (Andersen et al., 2022).

RESEARCH METHOD

This study uses a qualitative descriptive approach, where we directly observe phenomena specifically to improve German-speaking skills. As human instruments, we played a role in building critical awareness objectively and bringing meaningful findings from real experience through their sensitivity, responsiveness and flexibility (Peredaryenko & Krauss, 2013). The research tools were GoogleForm-based questionnaires and a digital observation instrument. Data were collected through recording video, notes and digital questionnaires. The learning source is a coursebook entitled *Netzwerk Deutsch als Fremdsprache* level A2 written by Dengler et al. (2013). We considered that this book has close relevance to the needs of students studying German in the third semester, and it presents topics worthy of being raised in speaking practice. The research subjects and participants were 12 students (initialized as P1-12) in 3th semester at the Faculty of Languages and Arts, Yogyakarta State University. We assume that they have mastered receptive and productive language skills, as they have basic language skills at level A2. Thus, they can perform communicative and observable speaking activities. Subsequently, we recorded videos while they learned and made verbatim transcripts to observe the sentence structure uttered by the participants. Condensation of meanings was also used to simplify capturing the research subjects' words, phrases, or sentences (Mahpur, 2017). The collected data from the questionnaire were digitally analyzed using calculating the percentage (P= $\frac{\Sigma x}{\Sigma y} \times 100\%$) to obtain an overview of the participants' awareness of learning activities. Then, qualitative analysis was applied to see the participants' linguistic speech acts, perspectives, and statements categorized through the coding process. Here, coding is a process of identifying words or phrases that define the presence of a prominent fact or a potent essence of facts from a speech set of audiovisual data (Cooper, 2009). The Interpretation derived from this coding also serves as a valuable basis for constructing the digital learning paradigm.
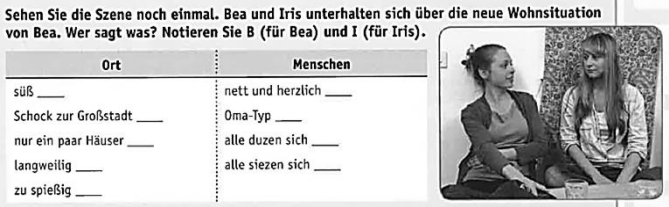
RESULT AND DISCUSSION

Adaptive learning applied on the coursebook *Netzwerk* and integrated into learning system *Besmart* presented three models for developing speaking skills. The first modification of learning activities. The second one is the integration of media formats that are presented digitally. Then the third is the variety of social formats. We will depict our findings in this chapter further.

Modified learning activities

We modified the learning activities by developing speaking skill-oriented tasks. The alignment of topics remains a significant concern so that learners can

carry out the exercise well, without feeling a learning jump. We modified the listening activity into an oral dialogue task, where receptive language skills became productive. Operational steps can be seen in the following table.

Table 1. (2a) Excerpts from the Coursebook Netzwerk (Dengler Et Al., 2013). (2b) Adapted Learning Materials In The Form Of Modified Learning Activities. (2c) Modified Sensory Learning Activities Into Speaking Skills.

Learning activities	Visual display
(2a) Original excerpt in the coursebook *Netzwerk* A2, Chapter 12, exercise 14b (Dengler et. al. 2017, p. 138): *Wer sagt was? **Notieren** Sie!* *(Who says what? Write down!)*	Sehen Sie die Szene noch einmal. Bea und Iris unterhalten sich über die neue Wohnsituation von Bea. Wer sagt was? Notieren Sie B (für Bea) und I (für Iris). **Ort** süß ____ Schock zur Großstadt ____ nur ein paar Häuser ____ langweilig ____ zu spießig ____ **Menschen** nett und herzlich ____ Oma-Typ ____ alle duzen sich ____ alle siezen sich ____
(2b) Adapted exercises in the form of modified learning activities: ***Machen Sie einen Dialog** wie im Video!* (**Make a dialogue** like in the video!)	**Besmart** Elearning „Sehen Sie die Filmszene an und Machen Sie einen Dialog wie in der Frage!" Kannst du über deine Heimat erzählen? (Essen, Leute, Wohnung) Zum Video
(2c) Adaptive learning applied in the classroom with customized exercise instruction: ***Sprechen Sie mit Ihrer Partnerin**/ Ihrem Partner zum Thema: Wochenende!* (**Talk to your partner** on the subject: Weekend)	„Kannst du über deine Heimat erzählen?" „Meine Heimat ist schön…und die Leute sind freundlich. "

The first finding showed that adaptive learning played a positive role in improving learning within heterogeneous situations based on the learner's perspective. Although this action does not guarantee a positive outcome, adaptive learning can at least clearly describe the progression of the learning process (Schmitz, 2017). There is evidence that participants can maintain the conversation topic without perceiving the modification as a distraction from the primary lesson.

They even see the learning adjustments as contextual enrichment. Originally, the listening exercise dealing with *Wohnsituation von Beatrix's* (Beatrix's housing situation) focuses on the coursebook. Then, it continued to be part of the dialogue in the adapted exercise.

The modified exercises are shown above, where we have changed the types of learning activities. Starting from listening and writing sentences, as suggested by the coursebook (see 2a), participants shifted the next learning activity to asking and giving answers orally, as suggested in the *Besmart* (see 2b). students try modified exercises (see 2c) in class. One participant (P12) asked the following questions: *„Kannst du über deine Heimat erzählen?"* *(Can you tell me about your home country?)*. Then the practice partner (P10) answered spontaneously: *„Meine Heimat ist schön. Es gibt dort viele traditionelle Essen, wie Gudég und Géplak. Auch die Leute sind freundlich"* *(My homeland is beautiful. There are many traditional foods there, like gudég and géplak. The people are also friendly)*. The context of the conversation does not deviate from the lessons in the coursebook. Prayogo & Sholikhati (2021) argued that developing learning content is essential to increase learner engagement, social interaction and learning achievement. Modification can be applied by creatively changing the content and learning activities. In this way, learners are not locked into theoretical concepts or constrained to just one language skill (Manoe, 2020). In completing the exercise, one participant (P10) processed responses by combining cultural experiences and social interactions. She related the topic *Heimatland (Homeland)* with traditional food and Javanese character. So that spontaneously improvised sentences emerged with keywords, for example, *viele traditionelle Essen, Gudég und Géplak, Leute, freundlich.*

The participant (P10) showed how she thought critically and tried to use the communication strategy creatively in the learning environment. Creative and critical thinking is essential within learning. In this regard, the lecturer must provide self-development chances for students. If the lecturer purposely and persistently triggers higher-order thinking in his students, he has a reasonable possibility of making the lesson effective (Miri et al., 2007). In terms of communication strategies, there are at least essential characteristics of effective communication: objective, transparent, simple to understand, short, clear, exciting messages, actively engaged, consistent, conveying information (Bodenheimer & Leidenberger, 2020; Wingen, 2019)

Table 2. Participants' Appraisal Regarding the Urgency of Modifying and Enriching Learning Materials

No	The variation and enrichment of material outside the coursebook *Netzwerk* is functional	Amount	%
1	Agree	8	66,66
2	Possibly	4	33,33
3	Disagree	0	0

Most of the participants thought that they really needed enrichment like this exercise, and they viewed positively that the modified exercise is a challenge that makes learning come alive. In contrast, questionnaire data showed that another third of participants (P3, P7, P8, and P9) did not feel the effects of this modified exercise. They only see this learning activity as a possibility that can help deepen the topic. This finding has become a new essence for previous studies on the concept of expression in "own words" and adaptation of ideas (Patahuddin et al., 2018). Unfortunately, the previous investigation has been limited to learning mathematics. The novelty we depict is an adaptation of ideas through linguistic aspects, not through the exploration of algebraic formulas and not through numerical symbols. Self-expression in own words is interpreted here as a speaking skill that includes linguistic, cognitive, affective and psychomotor activities. Adaptive learning proposes modifying learning activities to express oneself in communication situations using his/her unique expressions. In addition, these findings answer previous research questions, such as what forms of adapted learning content take (Karsam & Agustina, 2018).
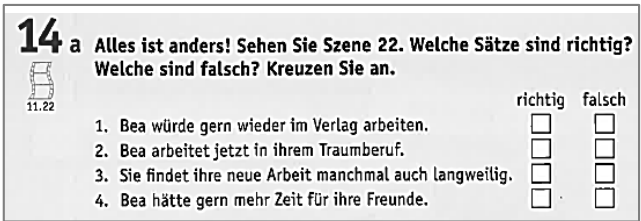
Integrated learning media

Media integration is a new way to create complete and unified learning (Meriyati et al., 2019). The second finding shows us concretely that media integration is needed to connect parts of non-text exercises that complement textbooks into digital learning systems in audio-visual form. This method shortens the procedure for delivering learning content. The finding complements the digital learning framework previously suggested by Basak et al. (2018). The learning process in table 4 shows that adaptation allows integration between textbooks (CB-Learning) and video-based language exercises embedded in the *Besmart* (E-Learning). In this regard, *Besmart* played a vital role in delivering material and connecting the learning process between lecturers and students in a virtual environment (Azman et al., 2020). In addition, various learning media integrated with learning resources support learners in increasing their capacity and skills (Maduretno et al., 2017).

Original learning resources suggested listening exercises and viewing video clips (see 4a). In this case, we have integrated some of the videos on the learning CD into *Besmart* as embedded videos without intending to infringe copyright. We included information about the original learning resources. Participants interacted actively with the learning system as in the previous modified learning activity. They are asked to respond to the topics discussed in the video in a dialogue appropriate to the situation (see 4b). This finding aims to demonstrate how adapted materials are delivered through media integration. In this way, participants can actively learn to answer the questions in the video compared to the visual presentation in the coursebook. In the exercise, participants play a fictional role as Beatrix and answer questions from Ms Bergmann in response to a stimulus. They then apply the conversation pattern in direct dialogue with their learning partner (see 4c). These procedures are seen as concrete elaborations that complement the concept of a structured development unit (Lewis, 1998). Book-based material can be divided into

specific courses by specifying different learning activities and using varied media. Changing the perspective that learning requires teachers and students to work within a narrow framework is very important so that language proficiency can be improved in their way (Jordan & Gray, 2019).

Table 3. (4a) Listening to Audiovisual Based Conversations; (4b) Learning Videos Adapted Through the Integration Process Appear Into Moodle-Based Learning Media; (4c) Speaking, Which is Practised in Class, Is A Form of Adaptive Learning.

Learning activities	Visual display
(4a) Original excerpt in the coursebook *Netzwerk* A2, chapter 11, exercise 14a (Dengler et. al. 2017, p. 128): *„**Sehen** Sie Szene 22. Welche Sätze sind richtig? Welche sind falsch? Kreuzen Sie an."* *(**Watch** video scene 22. Which sentences are correct? Which ones are wrong? Put crosses in the box.)*	
(4b) Integrated digital print and video media appear on *Besmart* with customized exercise instruction: *„**Machen Sie einen Dialog**, in dem Sie auf die gegebenen Fragen antworten!"* *(**Make a dialogue** with your partner in which you respond to the given questions!)*	

(4c)   Adaptive   learning applied   in   the   classroom with   customized   exercise instruction:

„*Interviewen* Sie jetzt Ihre Gesprächspartnerin, wie im Video." (Now, **interview** your interviewee as you did in the video.)

Speaking-oriented Learning takes place based on a communicative approach, where participants try to respond to new questions based on adaptations, both from videos integrated into *Besmart* and direct dialogue. This exercise can trigger creative thinking patterns and familiarize learners with communicative strategies. The participants conducted an appropriate dialogue about work and vacation. For example, we show a video transcript of an exercise between participants (P3) and (P1) in the course where they talked a short conversation. P3 said: „*Wie war deine Arbeit?*" (*How was your job?*). Then P1 answered: „*Ja, meine Arbeit war interessant. Jeden Tag habe ich neue Leute getroffen. Ich konnte mit meinen neuen Kollegen neue Wissenschaften [etwas Neues] lernen.*" (*Well, my work was interesting. Every day I met new people. I was able to learn new knowledge [something new] with my new colleagues). P3 further asked: „*Warum hast du jetzt weniger Freizeit?*" (Why do you have less free time now). Then P1 again answered: „*Weil ich Überstunden ableisten muss. Wenn ich das oft machen muss, bin ich dann immer müde.*" (That is because I have to work overtime. When I have to do it a lot, I'm always tired).

This exercise prepares students to communicate remotely flexibly and familiarly in a virtual environment supported by digital media. Pang et al. (2021) argued that today's learners tend to value learning that integrates audiovisual elements into a virtual space because it supports them in managing the task at hand. Gilbert & Han (1999) stated that a coursebook adapted through internet-based media was an advanced effort, where learning supported by audiovisual media could be realized. Felder & Henriques (1995) argued that visual learners tend to learn by observing objects and accompanied by words spoken in the target language. Lectures should facilitate them with live illustrations, for example, using pictures or films in contrast to auditory learners. They listen to audio data clearly and obtain necessary information from it. *Netzwerk*, as a coursebook, has presented the concept of integrating text, audio, video and LMS-based learning media. However, the learning materials need to adapt to specific learning situations and needs analysis considerations. Thus, the content of the lesson remains authentic and establishes new challenges. Apel & Apt (2016) stated that digital media allows broad learning with interactive lesson content and various disciplines connected. In addition, lecturers must set goals carefully so that adaptive learning does not

deviate far from the learners' needs. Detailed planning and goal setting can help learners achieve positive desires and expectations for learning targets (Dembo, 2004). The exercises adapted in this study are not only aimed at getting used to the correct construction of expressions but also to build language awareness, that communication can run flexibly and according to context.

Table 4. Participants' appraisal of digital media for the development of speaking skills
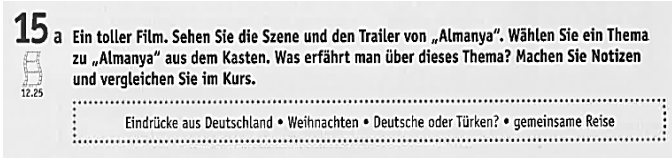
No	The use of digital media integrated with a coursebook supports developing speaking skills.	Amount	%
1	Agree	8	66,66
2	Possibly	4	33,33
3	Disagree	0	0

Based on the questionnaire analysis, we can see that most of the participants find this exercise very helpful to improve their speaking skills authentically. They can practice giving answers based on their own linguistic experiences using the adaptive exercises. However, We do not deny that more than 30% of the participants (P2, P5, P11 and P12) consider this exercise usual. This situation means they may have already had the same practice experience in other courses, which is nothing new. This finding responded to the earlier study question about adaptive learning that requires an adaptive system that can provide content to different users based on their learning styles (Onah & Sinclair, 2015). The depiction of learning resources in the previous discussion is still very general. It tends to lead to online learning resources that are too broad and do not assure that learners receive accredited and recommended learning materials for them. Thus, the use of learning content re-presented from the coursebook components and different objectives for language learning stands a novel consideration proposed in our analysis.

Varied social form

We have also implemented adaptive learning based on interactions between individuals in different social interaction formats. In this case, we transform individual exercises into partner activities where participants can apply their communication strategies in a dialogue.

Table 5. (6a) Listening to Conversations Using Audiovisual Media Provided by the *Netzwerk* (Dengler Et Al., 2013) With Individual Exercise Format; (6b) Adapted Exercise by Changing Social Interaction Format; (6c) Adaptive Learning In The Classroom Using A Different Type of Social Interactions.

Learning activities	Visual display
(6a) Original excerpt in the coursebook *Netzwerk* A2, chapter 12, exercise 15a (Dengler et. al. 2017, p. 138): *„**Wählen** Sie ein Thema. **Machen** Sie Notizen."* *(Choose a topic. Write some notes!).*	
(6b) The exercise type has been oriented to different social interaction formats through *Besmart*. *„**Machen Sie einen Dialog** mit ihrem Partner, in dem Sie auf die gegebenen Fragen antworten"* (***Make a dialogue** with your partner in which you respond to the given questions).*	
(6c) Adaptive learning in the classroom based on *Besmart's* exercise guidance.	

The figure table above shows adaptive learning by modifying the social format, where the individual task is changed to the partner's task. The exercise on the original (see 6a) tends to present an individual assignment. Then we developed an assignment that allows different social formats with another instruction (see 6b): *Machen Sie einen Dialog! (Make a dialogue with your partner).* This adapted

exercise allows participants to create a new social interaction by having oral dialogues with their partners (see 6c).

　　We show a video transcript between participants (P6 and P9): *"Ich fühle mich langweilig. Hast du Zeit am Wochenende?"* *(I am feeling bored. Do you have time this weekend?).* Then the speaking partner gave a complete response as follows: *„Ja, wir können am Sonntag um sieben Uhr zum Strand fahren. Und dann fahren wir nach Gumuk Pasir. Wie meinst du?"* *(Yes, we can go to the beach on Sunday at seven o'clock. And then we will go to Gumuk Pasir. What do you think?).* Thus, the linguistic aspects offered in the coursebook have evolved, from writing exercises to speaking exercises. Moreover, individual experience and geographical awareness seem to be linked in conversation. For example, the word *Strand* (beach) is associated with *Gumuk Pasir*, a recreation area with panoramic views of the sandy desert on the southern coast of Yogyakarta.

Table 6. *Participants' Opinions Regarding Speaking Skill Improvement Through Varied Social Interactions*

No	*Netzwerk* needs to be delivered in different social and media formats.	Amount	%
1	Agree	9	75
2	Possibly	3	25
3	Disagree	0	0

　　Most participants saw that this changed social format played an important role. This dialogical exercise is suitable, where error correction is not the primary consideration. Furthermore, they saw that communicative speaking activities tend to be significant. In contrast, a quarter of participants (P5, P7 and P8) tended to doubt whether this developmental exercise was necessary. They viewed this learning activity as an exciting possibility without guaranteeing learning success.

　　In previous theory, Trautwein et al., (2018) argued that deep structures, such as cognitive activation, constructive guidance and effective classroom leadership, have a more significant impact on creating learning success than surface structures, such as interaction methods social forms. However, in the finding, we can see that the changed format of social interaction can trigger close social relations between learners and their learning partners. Learners want active learning with their learning partners equally and without feeling shy. They need actual communication practice rather than just acting out a topic in a book. This study has provided new insights that the cognitive activation and constructive guidance process still may not ensure increased learning activities within aspects of language production. Thus, the varied social forms that fit specific language practices are essential, especially speaking. Partnering exercises like this can involve students in the learning process intensively and quickly. Through this adaptive learning, learners can gain linguistic confidence. Thus, they can take on different roles, adjust to their interlocutor and find the most effective communication in their

dialogue (Korniiko & Bondarenko, 2020). Therefore, varied social formats are an essential consideration in providing opportunities for learners (Funk et al., 2014). Partnering exercises are a suitable social format for dialogue activities and exercises related to presentations.

Learning is a complex endeavour that involves content and related factors beyond it. There are four factors that lectures should consider in developing adaptive learning: mastery of lesson content, capacity to create varied and innovative lessons, classroom management skills, and lastly, the capability to assess learning progress (Fischer et al., 2014). On the other hand, teaching style also needs to be paid close attention to due to its influence on psychological acceptance, extrinsic motivation, and learner comprehension. Delivering learning materials reinforced with the appropriate teaching style will positively impact the students (Gilbert & Han, 1999). Learning activities through digital learning systems should follow consistent and systematic procedures. Dick et al., (2001) consider several essential procedures in preparing subject matter: 1) identifying instructional objectives, 2) setting performance objectives, 3) developing an instructional strategy, 4) preparing and selecting learning materials. We adopted this process before and after the lesson, depending on the situation.

CONCLUSION

As a supplement to previous research on the still common framework of adaptive learning (Onah & Sinclair, 2015), this study refined its suggestions to three modes of adaptive learning for improving German language skills: modification of learning activities, integration of media between print and digital, and variations in social formats are interrelated. In addition, this study also updates the recent idea of a digital learning framework (Basak et al., 2018), that the learning requires innovative and interrelated aspects. Learning activities using digital media alone and isolating individuals in separate rooms is not enough. It also effectively requires other reliable learning resources such as a worksheet, printed coursebook, and real social situations. The findings and discussion above conclude that adaptive learning can improve German-speaking competence convincingly On the other hand, this learning model also has a significant beneficial impact on students and lecturers in the learning process regarding teaching and learning activities and time motivation and excitement. Suggestions for further studies are the need to create adaptive learning broadly in other aspects of language skills integrally. Moreover, quantitative evidence on the development of speaking skills through adaptive learning also has an essential role so that these findings become richer than previous studies.

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