



## **4A Accountable Learner Autonomy Model: Developing Digital Materials in Second Language Education**

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### **ABSTRACT**

*The purpose of this study is to examine the student teachers' learning experiences and perceptions of using online resources during their independent study shaped with the stages of 4A accountable learner autonomy model. For their digital material design, the teacher candidates participating in this study were trained with a wide range of digital tools for each language skill and then they were asked to search and find the most appropriate internet sources for their material design during the outside of class time. A mixed methods research design has been adopted in this study with the intention of providing a better understanding of the research foci and obtaining a broad view of the participants' "accountable autonomous" learning experiences and perceptions. The analysis and the interpretation of the data revealed that the use of the digital tools during their self-directed learning had a positive impact on the participants' "accountable autonomy", attitude, and language development. The emerged themes reported by the teacher candidates related to the integration of the online resources into the material design in language teaching were digitally enhanced learner accountability-autonomy, flexibility, attractiveness, and development of language skills.*

### **INTRODUCTION**

No one is perfect; we have the potential to make mistakes. However, being irresponsible and not being accountable towards yourself and other people for your actions cannot be accepted as an excuse. An accountable person does not only care for oneself but also cares for others. They think critically, set goals, depend on good habits, change the bad ones, and can deal with more than one task at a time. For their personal growth, being more aware of their strengths and weaknesses and in order to invest in their learning, students also need to be responsible for their behaviors in school and in life. Promoting learner accountability allows the learner to develop self-efficacy, take responsibility for their actions, and improve academic performance. On the other hand, holding teachers accountable for students' learning may cause many negative outcomes. It increases teacher authority and causes students to be more dependent on their teachers (Frymier, 1998). It demotivates learners, creates a negative classroom atmosphere, and adversely affects learners' performance. Learner accountability is not a new concept and there are a number of studies related to learner accountability and its impact on students' academic performance. In one of these related studies, Darling-Hammond et al. (1993) try to give an overview of the concept of learner-centered accountability and how it works in action in elementary secondary education. The second study analyzed in this study is based on the research done on eight students who were held accountable for their learning to be a good citizen and professional (Wiersema & Licklider, 2007). In another study that deals with student accountability in team-based learning, Stein et al. (2008) use students'

assessments of their teammates in order to put forward how the notion of group learning affects communication among group members and accountability. However, despite studies on learner accountability, creating optimal conditions to foster learner accountability within the digital era is an issue that still needs to be thoroughly investigated. This paper takes the position that in foreign language education holding learners accountable for their learning can be easy, fun, and effective through making learners autonomous and responsible for designing their digital materials. To this end, this study first blends the ideas from the literature to form its own concept of “accountable autonomy” that can be fostered through digital material design, and then it presents an accountable autonomy contract and checklist that frame all stages of the process from planning to the evaluation.

## **LITERATURE REVIEW**

### **Balancing Learner Autonomy with Accountability**

There is a close link between the notions of autonomy and accountability (Albornoz, 1991). In this study, from the learner perspective, autonomy provides learners with the opportunity of controlling their learning while accountability sets standards to make learners responsible for the results of this control. According to Holec (1981:3), “autonomy is the ability to take charge of one’s own learning”. Dickinson (1987: 11) describes an “autonomous” learner as a decision-maker who “is totally responsible for all of the decisions concerned with his learning and the implementation of those decisions”. For Benson (2003: 290), as having control over one’s learning requires various abilities, it is more appropriate to define it as a “capacity”. Learner autonomy is not an individual process; it is a social paradigm that is dependent on teacher and learning contexts. According to Little (1995), it is ‘pedagogical dialogue’ between teachers and learners. Teachers need to develop an understanding of the constructs of learner autonomy to create learner-centered learning environments that learners can display their autonomous behaviors. Otherwise, learners cannot exercise their responsibility by being put in a heavily teacher-dominated learning environment and situations.

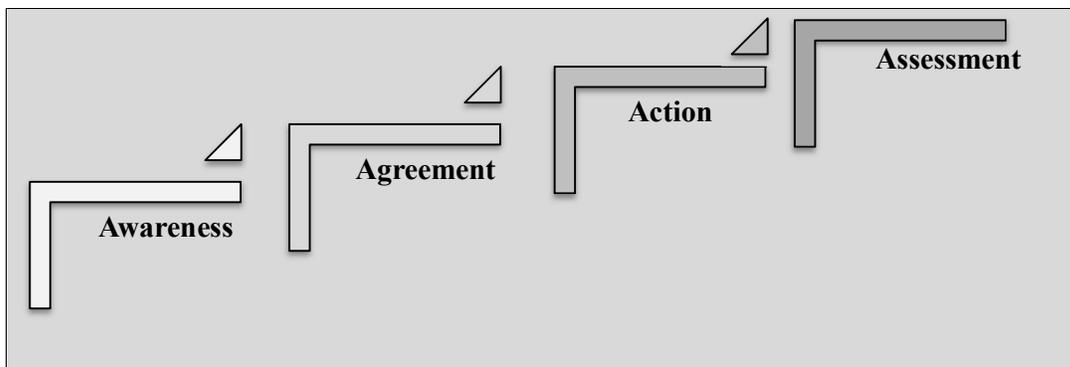
For shaping a more autonomous learning process that learners can play an active role in managing their learning process, Nunan (1997) suggests five levels of learner autonomy. The first level of the proposed model is awareness. At this level, learners’ awareness is raised regarding pedagogical goals and materials. Based on these goals and materials, learners are expected to determine their learner styles and strategies. The second level is involvement in which learners can choose their goals from the options. In the third level, intervention, learners take part in the process of modifying and adapting the goals and content. The fourth level is creation in which learners are allowed to create their goals and learning tasks. The last level is transcendence which takes learners beyond the classroom and helps them to connect to the outside world. At this level, learners become researchers and their teachers. According to Littlewood (1997:81), learner autonomy in language learning includes three components. Autonomy as a communicator refers to the ability to use language for the exchange of personal messages. Autonomy as a learner is the ability to take responsibility for the learning process in which they can apply their learning strategies. Autonomy as a person is related to a general sense of autonomy as an individual. In addition to these three types of autonomy, Littlewood also introduces two levels of autonomy as “proactive” and “reactive” autonomy. Proactive autonomy encourages individuality and lets learners determine their directions which are partly created by them. On the other hand, in reactive autonomy learners do not create their directions but they can arrange their materials “once a direction has been initiated” (1999:75).

Autonomy is one of the important ingredients of this study. The critical aim of the study

is to centralize and increase autonomy by not failing to establish an appropriate level of accountability in order not to experience any unwanted results. Accountability is a term that can be defined as “being required to take action, report, and justify own actions and performance based on already agreed-upon conditions”. In the educational context, for Cook-Sather (2010) student accountability refers to acting in accordance with what is determined by the adults in control. Regarding the definition adopted in this study, first, the main difference between responsibility and accountability needs to be clarified. Responsibility is something that you mostly feel inner force or need for taking action; however, accountability moves beyond responsibility. Besides something coming inside, under prescribed conditions it also requires a “formal commitment” from the accountable person who is “legally” agreed to give account and be penalized if not behave accordingly. In this sense, in order to have full control and fulfill the responsibilities, accountability entails “authority over the task or role” (Cornock 2011). Everybody has to take responsibility for their actions. Considering the educational setting, we believe that not only teachers but also students need to be autonomous and responsible; more than that they need to be held accountable for their learning. Therefore, the autonomy model designed for this study tries to develop highly autonomous learners through balancing autonomy with accountability. In this model, learners do not function independently of the classroom; rather learners take the control of their learning in collaboration with their teacher and other learners. The teacher does not disappear. The roles the teacher takes on change from the transmitter of knowledge to the facilitator. As students’ achievement and learning are the matter, from the course planning, material selection, activity design to the assessment stage, students need to be empowered to have a voice and take action. Holding teachers accountable for each stage of teaching and learning process may cause negative outcomes like more “teacher control and student dependence” (Frymier, 1998).

#### **4A Accountable Learner Autonomy Model**

The model proposed in this study has four phases: Awareness, Agreement, Action, and Assessment. The first stage of the model is the awareness stage. The aim of this phase is to make learners more aware of the content, goals, activities, materials, and the “accountable autonomy” conditions. With this awareness-raising stage, learners have the opportunity of connecting their background knowledge with the content and being physically, cognitively, emotionally, and linguistically prepared for learning. The second stage is the agreement stage in which learners are encouraged to improve their understanding related to the goals, content, and other expectations. In this level, learners are allowed to renegotiate any predetermined goals, given directions, and accountability terms. Based on these discussions, learners can modify the goals or set new learning goals and conditions. With this stage, they are ready to agree with the procedure and officially ready to move forward. In the third stage of action, individually or more preferably in a group, learners begin to search, seek for information, engage with the materials, collaborate with their partners or group members to embody the learning goals. In this stage, learner actions can show variety such as giving answers to the questions, suggesting solutions to the problems, designing a material, activity, or a project; and presenting these products and learning outcomes to the class.



**Figure 1. 4A Accountable Autonomy Model**

The final phase of the model is the assessment part. Assessment is one of the most important parts of all teaching and learning process. Assessment provides students information about the efficacy of their autonomous learning. It involves teachers and students in evaluating the strategies and criteria that they have used to attain the goals.

### **Digital Material Design for Language Classrooms**

The development of new technologies has brought new perspectives to foreign language education. The use of information technologies provides teaching models and plays a great role in promoting learner autonomy (Blin, 2004; Hayta & Yaprak, 2013; Healey, 2002; Laal et al., 2013; Lai & Gu, 2011; Reinders & White, 2016). As indicated by Raya and Fernandez (2001), they also “provide the practical means whereby learners can take a more active part in determining their objectives and syllabi, as well as the path and timing they choose to do that.” Technology-assisted teaching and learning environments help students be active and more alert not only in-class but also out-of-class. Providing a variety of learning resources and digital tools, technology-assisted learner autonomy enhances learners’ process of constructing their own learning. Considering the digital age and adjusting to this age, “flexible, autonomous, lifelong learning” is indispensable (Shetzer & Warschauer, 2000:176). In this study, in order to boost learners’ autonomy and at the same time to keep them accountable for their learning in-class and out-of-class time, the designed accountable autonomy model was applied to the technology and internet-based material design. With the help of digital tools, as prospective teachers students were supported to create their teaching materials. The ultimate goal of this task was to foster students’ autonomy and accountability while providing them with practical means, tips, and material samples that they could use to design their own digital materials.

## **METHODOLOGY**

### **Study Design**

This study proposes a learner autonomy model based on learner accountability terms that aim to develop more independent but also responsible individuals who can take charge of their decisions and actions regarding their autonomous learning process. To apply the model in foreign language learning, teacher candidates were asked to design their teaching materials through the use of digital tools. The main objective of the use of online tools is that they are more practical and motivational means to offer learners a wide array of resources and modes of learning experiences real or fantasy, to engage learners in more enjoyable and autonomous

language learning, and to nurture their creativity while preparing their materials. Within this learner autonomy model, learners were encouraged to be part of the process not only in-class but also out-of-class. During the class time, students were trained about the theoretical aspects of the material design in foreign language education and the use of online tools for creating materials for each language skill. Outside of class time, they used their time to prepare content and design relevant web tools for their micro-teaching sessions. Following the autonomy model, in the first; awareness stage, learners were informed about the accountability and autonomy conditions like what they were expected to do, how they were evaluated and be held accountable, and to what extent they were going to be autonomous. Additionally, they were also given details related to the learning objectives, essentials for material design, and various online tools that they could use to create their materials. The second stage was the agreement stage. In this stage, students were encouraged to critique the “accountable autonomy” terms, objectives, and course materials. Again in this phase, students were heartened to critically approach the basics and to state their criteria that they thought essential for producing their materials. This level is the accountability agreement phase where learners renegotiated all learning requirements and after these discussion sections, they accepted, adapted, or completely changed some of the points related to the learning model or task. After the agreement stage, the action stage comes. In this stage, based on the determined fundamentals and their study plan, students started to take action and design their autonomous learning outside the classroom under the discussed and agreed terms. Within the action phase, learners chose their partners or other group members to work in small groups. Moreover, in this part, they decided on which content and digital tools they were going to use and started to design their activity and material. In the assessment section, each group carried out their micro teachings and applied their digital tools into their teaching. After each teaching session, groups got feedbacks from the teacher and their peers. After this feedback session, they did the essential changes that they also agreed on. In order to assess the impact of the use of technology on the learners’ autonomy levels, participant student teachers were asked to complete a survey before and after the application of the “accountable learner autonomy” model. In addition to the survey, teacher candidates wrote reflection papers to provide details related to their thoughts and learning experiences. Finally, in groups of 5 or 6, students participated in focus group interviews and they shared their feelings and ideas on the use of digital tools for designing their materials and their effects on their autonomous learning. Within this mixed-methods approach, this study aimed to investigate the following questions:

1. Does the integration of the digital tools into the language learning process affect the student teachers’ technological competencies and learner autonomy in language learning?
2. What are the participants’ perceptions and experiences related to the use of digital materials during their language teaching sessions?

## **Participants**

The participants in this study were recruited from the student teachers studying English Language Teaching. Participants were first asked to attend a 5-week-long training course in which they were informed about the use of digital tools in material design for language teaching. Then, they were assigned into groups to design their digital material for their micro-teachings. As pre and post-data collection tool, they were surveyed through questionnaire and at the end of their material design process and teachings, they completed reflection papers and they were interviewed through the focus group interview technique. The number of participants involving in each data collection stage was summarized in Table 1.

**Table 1.** Sampling Procedure in Research

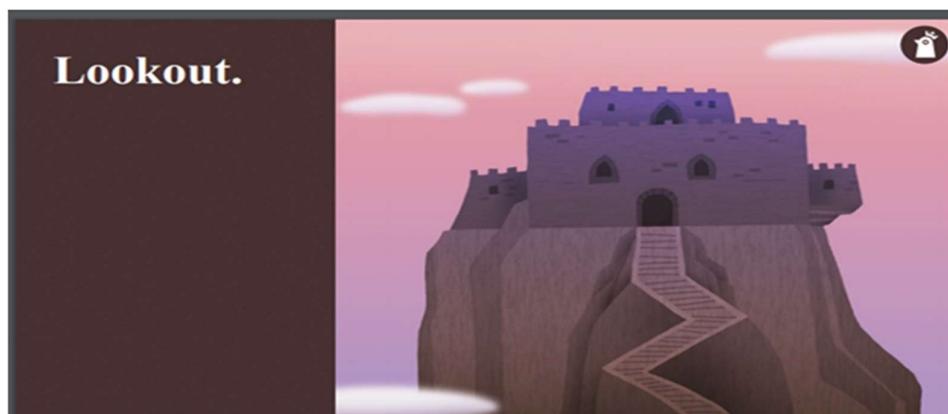
Research Instrument	Number of Participants
Pre& Post Questionnaire	25
Reflection	23
Focus Group Interview	23 (3 groups of 6 and 1 group of 5 people)

### Sample Digital Materials and Online Tools Used by the Participants

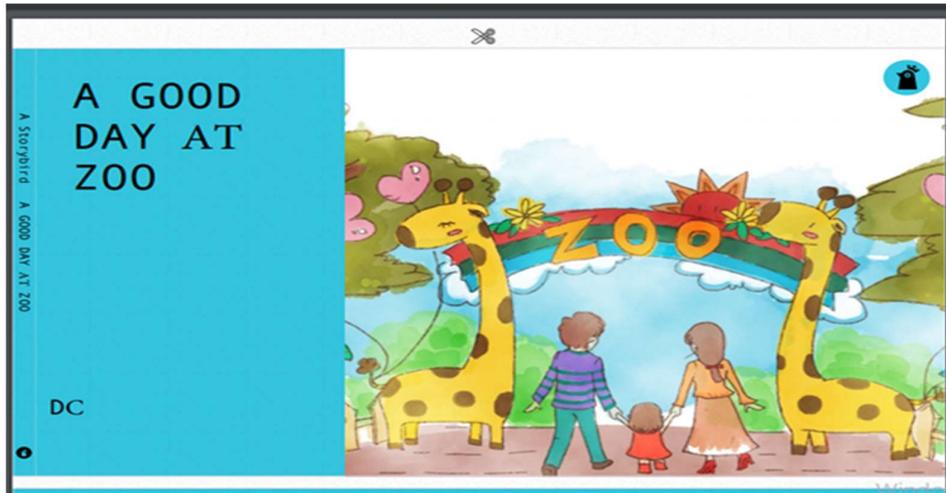
Based on the learner autonomy model, student teachers chose their topics and determined the most appropriate digital tools for their topics and language activities for their teaching sessions. Two of the online tools used by most of the student teachers for their teaching were story jumper and story bird. These are digital stories creating a platform on which teachers can write and illustrate their storybooks with graphics and can publish them. Story jumper also allows teachers to design their characters and narrate their stories by adding their voices. Some sample storybooks created by the teacher candidates through *story jumper* and *story bird* are:



**Screenshot 1.** A Story Designed through Story Jumper

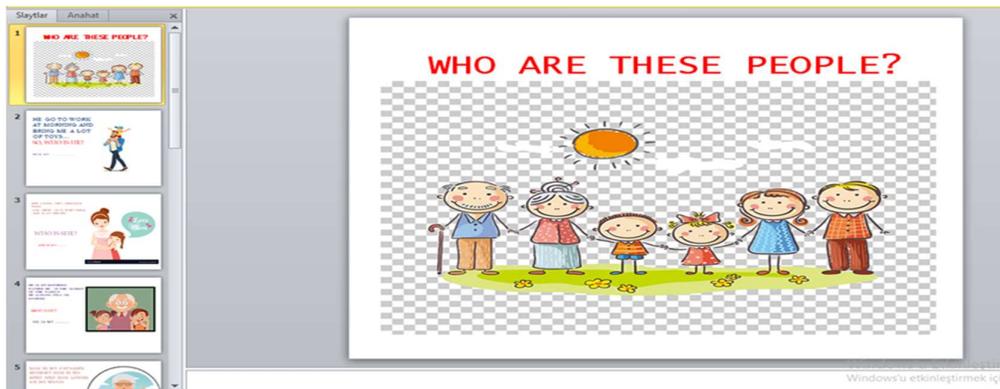


**Screenshot 2.** A Story Designed through Storybird



**Screenshot 3.** A Story Designed through Storybird#2

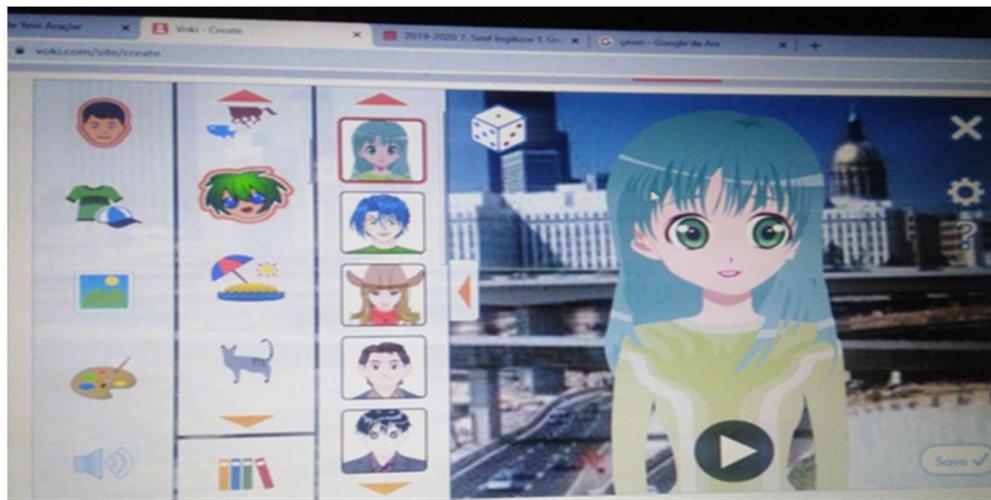
For a presentation tool, some of the student teachers preferred to use PowerPoint, Prezi, and Powtoon. Especially with its video creation features, Powtoon provided students with opportunities to create animated videos for their presentations. In addition to these tools, in order to share their insights related to how to enhance student engagement in the classroom, one student group created their talking character by using Voki avatars.



**Screenshot 4.** A Story Designed through PowerPoint



**Screenshot 5.** A Presentation Designed through Powtoon



**Screenshot 6.** A Voki Avatar Designed by the Participants

Kahoot was another online tool used by the teacher candidates to assess their teaching. Through this tool which is a game-based learning platform, some of the participants designed multiple choice quizzes for their teaching content and other students participated in these quizzes through their mobile devices.



**Screenshot 7.** A Quiz Created with Kahoot

## **Research Tools**

### **Digital Material Design for Language Classrooms**

To ensure and improve the learners' performances in their digital projects under the accountable autonomy contract (see Appendix A) which was designed with respect to the stages of the learner accountability and autonomy system used in this study, an action plan template was created (see Appendix B). It helped to motivate learners to participate in the process, increase learners' engagement, let them set their priorities for their learning plan, and also encouraged the students to share their ideas related to the presentation of the projects and their evaluation criteria. The action plan had four parts. The first part was about the principles necessary for designing internet assisted materials for English language teaching. In the theoretical part, students had already been informed about the guidelines essentials for the material design. In this part, they were asked to negotiate with their group members and discuss other possible essentials teachers needed to consider while developing their digital materials. The second part asked the participants to determine the topic and the language skills that they were going to base their materials on. In the third part, learners provided details related to the digital and online tools that they thought to use for their teaching materials. The last part was related to the procedures about how groups shared the roles among their group members.

### **Questionnaire on Learner Use of Technology**

For the purpose of investigating the participants' perceptions of technology use in language teaching, a modified version of Das and Mishra's (2016) questionnaire was used as a pre and post data collection tool. The adapted questionnaire consists of 20 questions; 12 items were taken from the original questionnaire from two different sections and 8 new items were added to the final version. The tool was redesigned to assess the student teachers' both initial and final opinions on the use of technology in their studies within a five-point Likert scale ranging from "strongly disagree" to "strongly agree". Cronbach's alpha was used to assess the reliability of the new questionnaire and a higher reliability coefficient ( $\alpha=.95$ ) was obtained.



## FINDINGS

This section will provide the research findings related to the use of digital tools and their effects on learner accountability and autonomy, and language development.

**Table 2.** Wilcoxon Signed Ranks Test Analysis of the Student Teachers' Perceptions about the Use of Information Technology in Language Teaching

<b>Pre&amp; Post Perception Mean Scores</b>			
	N	Mean Rank	Sum of Ranks
Negative Ranks	0 <sup>a</sup>	.00	.00
Positive Ranks	25 <sup>b</sup>	13.00	325.00
Ties	0 <sup>c</sup>		
Total	25		
<b>Test Statistics<sup>a</sup></b>			
Z			-4,374 <sup>b</sup>
Asymp. Sig. (2-tailed)			.000
Effect size r			.61

Based on the Wilcoxon Signed Ranks Test Analysis, there were larger differences between ratings in favor of the participants' post mean scores related to their positive perceptions about incorporating technology in language teaching scores. The median post-test ranks were statistically significantly higher than the median pre-test ranks  $Z=-4.37$ ,  $p=.000$  with a larger effect size ( $r=.61$ ).

**Table 3.** Wilcoxon Signed Ranks Test Analysis of the Student Teachers' Reported Technological Competence

<b>Pre&amp; Post Technological Competence</b>			
	N	Mean Rank	Sum of Ranks
Negative Ranks	0 <sup>a</sup>	.00	.00
Positive Ranks	17 <sup>b</sup>	9.00	153,00
Ties	8 <sup>c</sup>		
Total	25		
<b>Test Statistics<sup>a</sup></b>			
Z			-3.782 <sup>b</sup>
Asymp. Sig. (2-tailed)			.000
Effect size r			.53

There was a significant increase in teacher candidates' reported technological competence after training,  $Z=-3.78$ ,  $p=.000$  with a larger effect size ( $r=.53$ ).

**Table 4.** Pre and Post Mean Scores Obtained through Questionnaire on Learner Use of Technology

	Pre-mean	Post-mean
1. I want to use technology in my studies		
2. because:		
3. It will help me get better results in my subjects.	2.84	4.56
4. It will help me understand the subject material more deeply.	2.64	4.68
5. It makes completing work in my subjects more convenient.	2.6	4.64
6. It motivates me to explore many topics I may not have seen before.	2.24	4.6
7. It allows me to collaborate with others easily, both on and outside of the campus.	2.92	4.52
8. It will improve my IT/information management skills in general.	2.64	4.48
9. It will improve my career or employment prospects in the long term.	2.52	4.56
10. I get more actively involved in courses that use technology.	2.48	4.24
11. Technology makes me feel connected to what's going on at the college/ university.	2.64	4.2
12. Technology makes me feel connected to other students.	2.8	4.48
13. Technology makes me feel connected to teachers.	2.68	4.48
14. I wish my teachers in the university would use and integrate more technology in their teaching.	2.8	4.36
15. Technology as a subject should be taken by all pupils.	3.08	4.68
16. Technology makes everything work better.	3.28	4.52
17. Technology is very important in life.	4.08	4.88
18. I am able to get additional information and update my knowledge in the technology classroom	2.8	4.52
19. I find the audio and visual effects in the content matter to be appealing	2.84	4.8
20. I am motivated to learn further in the technology classroom.	2.72	4.6
21. In technology, you can think up new things.	3.32	4.8
22. There is a relationship between technology and language teaching.	3.68	5

Based on the mean score differences between the pre and post-application of the questionnaire, the higher perception change was obtained from item#4 *“It motivates me to explore many topics I may not have seen before.”* with mean difference=2.34. As a result of the experiences that this study gained from the participants, it can be inferred that working with digital tools allowed and motivated the teacher candidates to explore new topics, and thereby broaden their horizons. The other items that the participants indicated change with the same mean difference =2.04 were item#2, 3, and 7. They stated that the use of technology-enhanced their understanding and working with the subject material. Additionally, they reported that technology had an important role in their career development.

For data display and more effective data visualization, the qualitative and quantitative data were tabulated with appropriate charts, graphs, and tables. The most common themes identified through the thematic analysis of the reflection data regarding the positive effects of the use of digital tools in designing teaching materials are *money and time-saving technological flexibility, attracting students' attention, learner accountability-autonomy, and integrating language skills*.

**Table 5.** QDA Miner Lite Code Frequency Analysis of the Impact of the Use of Digital Tools

Codes	Count (frequency of being stated)	%Codes
C#1 meeting learner needs	7	4,7%
C#2 promoting interaction	7	4,7%
C#3 creativity	2	1,4%
C#4 attracting students' attention	33	22,3%
C#5 eco-friendly	1	0,7%
C#6 easy teaching process	5	3,4%
C#7 repeated review option	1	0,7%
C#8 easy access	6	4,1%
C#9 technological flexibility	40	27,0%
C#10 learner accountability-autonomy	28	18,9%
C#11 integrating language skills	11	7,4%
C#12 different repertoire of resources	7	4,7%

Based on the analysis of the reflection qualitative data set, twelve codes were identified. The most frequently referred code by the student teachers related to their experience of using digital tools in designing their language teaching materials was the “technological flexibility” ( $f=40$ ) offered by the digital tools. In terms of the dimensions of the flexibility sustained by the digital tools, most of the participants emphasized that the use of technology added flexibility especially in the design, implementation, and access of the materials that they designed for their projects. They stated that digital resources with free countless online templates made their work easier. It was also indicated by the teacher candidates that even though you did not have any technological skills, playing with the available facilities, it was an easy process for them to create the content and material and to design the related activities.

*“What’s more my materials can be used for different topics because they are easy to change and the pictures and the topic can be used for different contexts.” (Reflection#1)*

*“The materials are flexible, you can apply for any topic and change the instructions...just log in to the site and you can whatever you want.” (Reflection#2)*

*“The sites that we used to design our material were free and whenever you want you can change the content and add more information.” (Reflection#7)*

*“Also in this era, students spend most of their time with the Internet, social media, and technology. So designing digital projects are not so difficult for them and do not take their time at all.” (Reflection#9)*

*“Compared to the physical materials, designing digital materials are more flexible and economical.” (Reflection#13)*

The second most common code highly emphasized by the participants was the digital tools' role in empowering learning through attracting students' attention ( $f=33$ ) with visually engaging images, animated GIFs, videos, digital games, and quizzes. Regarding the digital tools' multimodal learning contexts enhanced with visually appealing features, student teachers stated that the use of online resources and websites not only attracted their attention and interest but also transformed a challenging task into an enjoyable learning process.

*“Digital tools are easy to use and they provide opportunities to prepare more visually appealing materials; this makes learners more interested in the content and more willing to participate activities.” (Reflection#1)*

*“You can prepare entertaining materials. In order to make the learning interesting, I created a story with a character called Jenny by using many attractive and colorful pictures, through which I aimed to take their attention.” (Reflection#2)*

*“We prepared a quiz with Kahoot for both speaking and reading skills, also for testing; we applied the quiz like a competition to make it more challenging and enjoyable for the students. The quiz can be completed individually or as a group.” (Reflection#10)*

The next code that emerged from the qualitative data analysis was learner accountability & autonomy ( $f=28$ ). Teacher candidates emphasized that through the exploitation of the digital tools students' motivation and engagement could be enhanced both inside and outside the classroom. Some of the participants stated that outside the classroom, they liked to spend time with the Internet and social media; however, they confessed that while working with the project and online learning resources they realized that during the ordinary class time they still could be more productive, responsible, and keep learning.

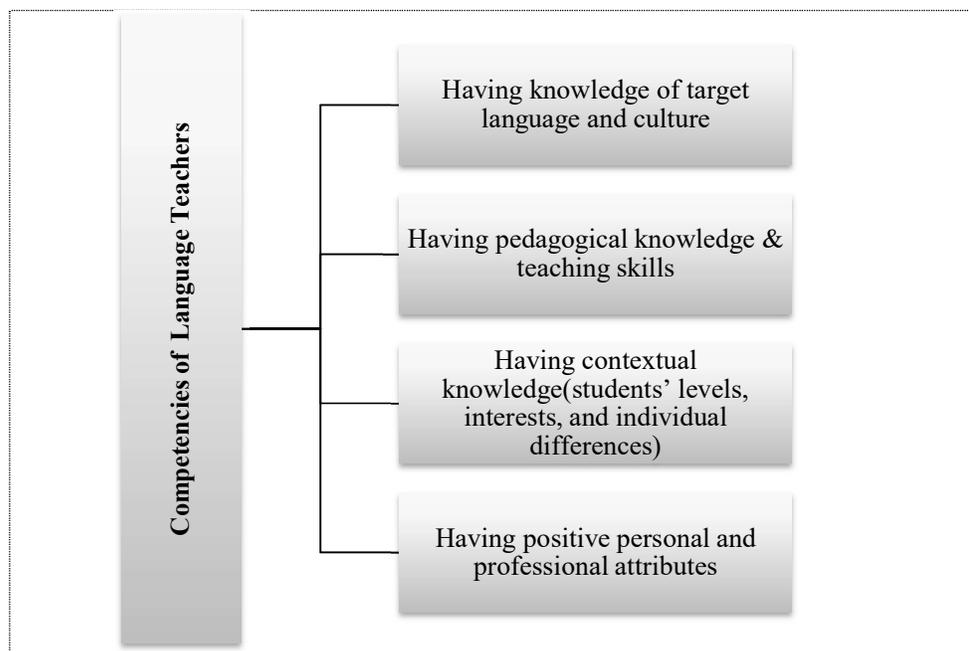
*“We think that technology and instructional tools enable students to develop autonomous learning skills. They can identify what they need to learn; use online resources accordingly.” (Reflection#6)*

*“Digital tools make students more willing to do their tasks and fulfill their responsibilities.” (Reflection#9)*

*“I think that it creates a sense of responsibility as it motivates students to be part of the process and reach the content and activities at any time.” (Reflection#18)*

The last common code indicated by the participants was the opportunities provided by online resources in integrating language skills at different levels ( $f=11$ ). It was stated by the teacher candidates that the use of online tools helped teachers design various digital activities and materials that provided a language learning platform for incorporating different language skills at different stages. Free language learning websites, online newspapers, reading activities, digital storybooks, YouTube videos, podcasts, online tools for pronunciation practice, online grammar and spelling checkers, websites for sample writing genres, and online tools and tasks for developing speaking skills were some of the digital resources specified by the participants.

*“I have always been in the opinion that the material must emphasize the skills in addition to teaching linguistic structures, so while designing my digital material, I tried to integrate the language skills of listening, reading, and speaking.”(Reflection#3)*



**Figure 2.** Teacher Candidates’ Stated Language Teacher Competencies (Focus Group Interviews)

Regarding the question about the professional and pedagogical competencies of language teachers, teacher candidates provided a number of responses. Based on these responses, four main categories of teacher competencies were identified. The first view recorded from the focus group interview was that it was inevitable and essential for the language teachers to know target language and its culture and they need to use target language effectively: *“They should know subject matter ...and professional skills (Focus Group#1); “They must master the culture of the language they teach” (Focus Group#3)*. The second category of qualifications acknowledged by the participants that language teachers needed to possess were general and specific pedagogical knowledge and teaching skills. According to the teacher candidates, for an effective language learning process, language teachers needed to ensure that they could create positive learning environments with creative and innovative teaching and classroom management skills. Additionally, they also indicated that using teaching materials and activities enhanced with appropriate information technologies were prerequisite for supporting their pedagogical practices: *“I think, rather than know the information and have the right materials, they need to know how to use these in their teaching” (Focus Group#1); “While preparing the lesson, he/she must be planned, should be able to arrange their time well and organize their course well” (Focus Group#2); “He must be good at classroom management” (Focus Group#3); “Technology skills must be in the top three. Since we are in the age of technology, we have to adapt to this” (Focus Group#4)*. The third teacher competency that emerged from the focus group interview data was the knowledge of the context that was related to anything about learners. Creating effective teaching and learning environment also entails the detailed knowledge of learner levels, differences, and interests, etc. In this respect, during their group interviews student teachers emphasized the importance

of identifying and meeting the learner' needs, appreciating the individual differences, and supporting all learning styles through different with different teaching practices and resources: *"Teachers need to arrange their lessons according to the levels of the learners"* (Focus Group#1); *"They should check the students' readiness to learn and show concern for their students' needs"* (Focus Group#2); *"Especially, if they are dealing with the young language learners, they need to consider their interests"* (Focus Group#3). The last essential qualification that the language teachers need to have is related to adopting and exhibiting positive personal and professional attitudes. Concerning the positive attitudes for building good student-teacher rapport, participants reported the importance of having tolerance, patience, and using humor: *"In addition to strong communication skills, language teachers should show tolerance and be patient with their students"* (Focus Group#1); *"I think he should be funny and patient; by this way, he can reach his students with fun, playful and concrete teaching methods"* (Focus Group#4).

## **DISCUSSION AND CONCLUSION**

The main purpose of this study was to examine the impact of the use of digital tools on the concepts of learner autonomy, accountability, and language development. Student teachers were recruited as research participants who were invited to attend the required training programs. In these training sessions, they were exposed to the essentials they needed to take into consideration while designing any digital materials for language teaching. They were also made familiar with a wide range of online resources that they could use for each language skill. After all these training courses, they were assigned into groups to design their digital material that they were going to apply during their micro teachings. The training sessions and teacher-student conferences were carried out during class time. However, for the designing of their digital projects, the participants were asked to collaborate with the other group members outside of class time. All stages regarding the project from planning to presentation part were arranged in accordance with the learner autonomy& accountability contract. The effects of the research foci on their independent learning experiences were explored through surveys, focus group interviews, and reflections.

The data related to the student teachers' learning experiences enhanced with digital tools showed that using online tools for designing materials played a major role in promoting more controlled and accountable learner autonomy. Teacher candidates' comments suggested that being part of a more self-directed, fun, at the same time a more challenging learning process in which they could create their own activity plan, make their choices, defining team members' responsibilities allowed them to invest and structure out-of-class class time and keep learning. Being able to make decisions and choices during self-directed learning is also emphasized by other studies. According to Luke (2006) and Hamilton (2013), the use of technology provides opportunities for the learners to be more free and autonomous by having them be actively involved in choosing content and activities. In addition to this increased freedom, student teachers also indicated that being aware of the fact that they were going to be accountable for the outcome of this ownership of their learning which was their digital materials; they had a more conscious commitment and responsibility. Another positive impact of using web-based materials on autonomous learning is to create "a safe context" enhanced with a wide range of tools in which learners can apply the approach of "learning by doing" and in which they can try new strategies when one does not work (Raya & Fernandez, 2001). Concerning this point of web-based experiential learning, two teacher candidates reported that they had experienced hard times while choosing the right tool for their material design and tried different tools and failed several times before finding the one which met their needs.

However, they added that this was a good experience for them as it helped them overcome the fear of failure in integrating digital tools in their language teaching.

In addition to developing learners as an autonomous language learner, online tools play an important role in developing language skills. While designing their digital material for their micro-teaching, the student teachers stated that they paid special attention and effort to integrate language skills. They reported that the Internet was so powerful in terms of offering a wide variety of innovative ways, tools, and activities for enhancing students' language skills. For Blake (2016), technology-enhanced task-based language teaching is a good ingredient for motivating learners to integrate language skills in a similar way that they use new technologies in their daily lives. Based on the findings of their study which explored the impact of technology on developing students' language skills, Kalanzadeh et al. (2014) found that the use of different technological tools like films, videos, CDs, etc. was effective in improving language skills and gain in the same study, the majority of the participants of the study stated that they were in favor of using these tools in their future teaching. In another study which was conducted by Nassim (2018), 24 students of English were asked to design their digital story. At the end of the project, the findings showed that students not only enjoyed the process but also improved their reading and writing skills. Regarding the effects of e-learning strategies on the development of language skills, Banditvilai (2016) and Soliman (2014) found that students who were exposed to the e-learning environments improved both their language skills and autonomy in language learning.

Besides independent learning and language development, another aspect that internet technology has a positive impact is student motivation. During the focus group interview and in their reflections, most of the student teachers indicated that their digital materials not only boosted their friends' motivation as a student during the micro-teaching sessions but also let them enjoy the process of designing material. In parallel with the findings of this study, based on the study they carried out to see the impact of digital tools on the students' performance and motivation, Wichadee and Pattanapichet (2018), found that students who were exposed to digital tools were more motivated and had higher performance than the ones who were not. In another study exploring the learning environments enhanced with multimedia tools and applications and their effects on the learners' language development, participants indicated that they had experienced an enjoyable time while working on their webpages (Yang & Chen, 2007).

Even though it has some advantages like having a more purposeful and organized process in gaining deep insights into own teaching and the learning environment because of being familiar with the context, being a teacher-researcher of this study is the main limitation of this research study. Not to damage their relationships with their teacher, participants may sound more positive related to their learning experiences. To eliminate the negative effects of this limitation and provide more accurate and reliable data, the researcher tried to triangulate the data with different tools and gathered the qualitative data through group discussions which were more effective to generate thoughts and encourage students to talk more. This study primarily aimed to reach more deep and reflective data with qualitative research tools. To gather more statistical data and maintain the generalization of the findings, in subsequent studies, through the pre & post research designs with larger samples, the impact of the internet sources on the learners' independent learning and their development in each language skill can be investigated.

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## Appendix A

### 4A-Accountable Learner Autonomy Contract

		Teacher –Student Meeting Notes
<b>AWARENESS</b>	Psychological readiness	
	Being cognizant of accountability conditions	
<b>AGREEMENT</b>	Understanding the accountability terms	
	Willingness to negotiate the terms that are not suitable or adequate	
	Agree to the negotiated terms	
<b>ACTION</b>	Developing an action plan	
	Finding& Designing resources	
	Collecting& Working with data	
	Being ethical & critical dealing with the information	
	Collaborating with the teacher	
	Reporting the findings	
	Justifying the process with the intellectual standards	
	Effective use of time	
<b>ASSESSMENT</b>	Self-monitoring	
	Being open to feedbacks	
	Being reflective	
	Generating constructive solutions to the problems	

### Appendix B: Accountable Learner Autonomy Action Plan:

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**Essentials:**

Do you agree on the all Essentials included in accountability autonomy contract? Would you like to add any new principle?

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**Topic & Language Skills:**

- Which topic are you going to focus on while designing your digital material?
  - Which language skills are you planning to integrate into your micro-teaching?
- 

**Role Sharing Procedure:**

How you are going to share the roles? Are you going to follow any strategy to equally assign task roles?

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**Online Resources:**

Which online resources are you going to use?  
How are you going to integrate /adopt them into your activities?

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**Digital Material Design**