

The Influence of Digital Devices on Learning Interest, Engagement and Academic Performance in Basic Police Training – Experiences and Findings

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Abstract

The Bavarian Police training aims to equip all 750 police teachers and 4.000 police officer trainees with officially approved police tablet PCs and smartphones by the end of 2025. Following a phased approach, teachers and trainees are being issued with tablet PCs (convertibles) and smartphones. Overall, there is no doubt that the use of digital devices is important and necessary in order a) to prepare the police trainees for their future work as police officers and b) to support their learning process. However, the question arises as to how exactly they benefit from those digital devices. For getting a first insight on the impact of digital devices on learning interest and engagement of police officer trainees in the classroom, as well as on their academic performance in general, the Bavarian Police conducted a digital pilot project with a single unit of 100 police officer trainees and 20 police teachers and trainers for 21 months from December 2019 to August 2021. The findings show that different digital devices have different impacts on the learning behaviour as well as on the academic performance of the police trainees. Above all, tablet PCs and interactive whiteboards have shown to improve learning behaviour. Furthermore, the findings show that digital devices, which are not used regularly, do not improve the classroom behaviour of the trainees or they may even worsen it slightly. The study puts forward several practical suggestions for the further implementation of digital devices at police training such as the necessity of training for the police personnel and the need to develop new didactic methods as well as new modes of teaching.

Keywords: police training, digitalisation, mobile devices, learning interest, academic performance

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Introduction²

The world and society are continuously changing and, especially the digital transformation has increased the speed of this change. Therefore, the police as an organisation, the fields of work and police training are also strongly affected by the digital transformation. While the research on digitalisation and its impacts on schools and higher education (e.g., Hwang & Tsai, 2011; Nikou & Economides, 2018) has led to a large number of empirical studies and projects, the number of publications on the impact of digitalisation on police education and training remains low. Research on police education tends to focus on topics such as the relationship between police training, higher education, and performance (Albarano, 2015; Henson et al., 2010), use of force (Paoline & Terrill, 2007), police behaviour (Rosenfeld, Johnson & Wright, 2020; Rydberg & Terrill, 2010) or the impact on simulation based training in police education and training (Beinicke & Muff, 2019; Sjöberg, Karp & Rantatalo, 2019). However, empirical research on the impact of digitalisation on police education and training (e.g., Chapparo, 2017; Holmgren, Holmgren & Sjöberg, 2019) is currently very limited.

In the following, we will show how Bavarian police training has responded to the digital transformation and what are the actual measures adopted by it. We shall present empirical findings on how the use of digital tools in police training has proven itself so far. Although empirical evaluations are still rare in the police context, the evaluation of the measures and actions taken is essential in finding out what works and what more needs to be done to achieve the desired success. Firstly, the Bavarian police training is briefly described to enlighten the context of our study.

The Bavarian Police approach to face digital transformation in police training

Already before the COVID-19 pandemic in spring 2020 the Bavarian police training had launched the process to renew and replace the classroom equipment in their police academies with digital devices (digital whiteboards). The COVID-19 in spring 2020 accelerated this on-going digitalisation process enormously. For example, a learning management system (LMS) (operated by the open source software ILIAS) was implemented

and has since been used as a central component in teaching and learning at classroom as well as in self-study. In addition to the adoption of the LMS, teaching and learning materials were also changed accordingly or created anew.

Besides the immediate response to COVID-19 and its consequences for police training (e.g., locking down all police facilities), the Bavarian Police decided to equip its police students with digital devices by 2025 and formulated guidelines for managing this process (cf. Fuchs, 2022). Since September 2022, 3,040 police trainees (around 80% off all trainees) have received personally assigned convertibles.

The convertible is used in two ways. On the one hand, it provides a learning medium. Trainees can, for example, take notes on learning materials in class, prepare for tests or participate in video conferences. On the other hand, they can use the convertible as an operational tool. It can be used to make queries in the police systems or to create an accident sketch via the tablet function. By taking the convertible to the internships at the Police stations, the transition from the police training to the police practice can be made seamless.

Additionally, the Bavarian Police pursues the *Mobile Police* (mPolice) concept. The same equipment is available in the police stations as is used in training. The so-called *mPolice* smartphones enjoy a high level of acceptance among the police officers. The police trainees learn about the police applications of the smartphone in the class and in practical training. *mPolice* smartphones were distributed to police trainees.

To enable the smooth functioning of the new digital devices, the technical infrastructure in the police academies had to be upgraded. The Figure 1 points out the four central components. i.e. qualified teachers, didactics, learning platform, hard- and software, a successful digitalisation process in police training requires.

Method

Context of the study – Bavarian Police training

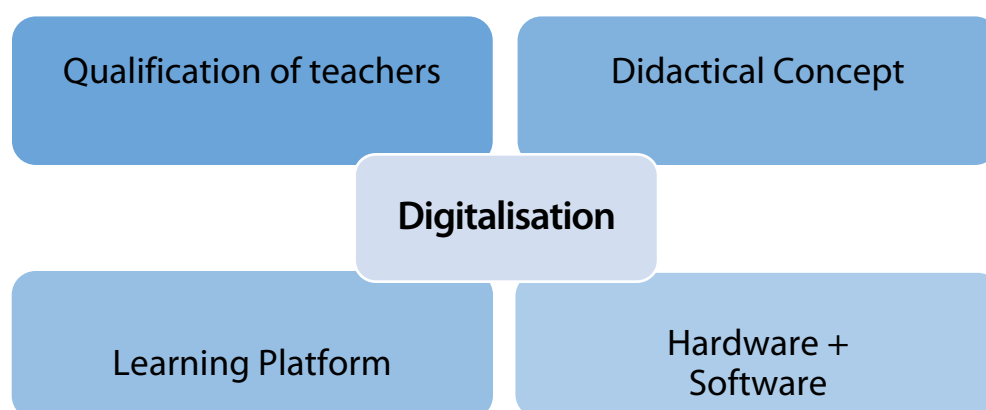
Our study evaluates the implementation of the digital pilot project in Bavarian Police training. Bavaria is a federal state in the south-east of Germany with a popu-

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lation of 13.1 million. In 2022, the Bavarian Police has 44,000 employees, including around 3,800 police trainees. In total, the Bavarian Police comprises six police academies of different sizes in terms of the number of personnel and trainees.

Each police academy is divided in organisational units of 100 to 160 police officers. All the trainees complete their police training within their respective units. In the two and a half years of the police training (divided into five terms), each trainee completes 5,000 hours of classroom lessons and practical training.

Figure 1: Four central components for a successful digitalisation process in police training (own illustration)



The curriculum consists of two almost equally weighted parts. On the one hand, there are Legal Theory classes as well as studies in Politics, Professional Ethics and English. On the other hand, there are practical classes such as simulation-based training for typical work situations (e.g., traffic checks or domestic violence interventions), lessons in Driving and Communications as well as in Self-Defence and Physical fitness. Moreover, the curriculum includes two internships at a local police station for four weeks (during the third term of training) and again for twelve weeks (during the fourth term of training). After passing the final examination³, police officer trainees can join a police station or the riot police or qualify for the higher education programme (diploma programme of the Bavarian Police).

Participants

Instead of equipping the whole police training personnel (700), all police officer trainees (3,800) and each classroom (160) at once with the new devices, it was decided to launch a pilot project in one organisational unit (project unit) with 25 teachers, 99 police officer trainees and 4 classrooms⁴. Initially the participants in the study comprised all 99 police officer trainees

(29.0% female), but six police officer trainees left the unit during the training run. By the end of the police training, 21.5% of the participating 93 police officer trainees were between 19 and 21 years old, 49.5% between 22 and 24, 17.2% between 25 and 27, and 11.8% were 28 years or older. In addition, five organisational units (N = 629; 25.6% female) of the same cohort served as control group regarding the measurement of academic performance.

Research design

In the second term of their police training in December 2019, each classroom in the project unit was equipped with an interactive whiteboard (IWB). Previously the classrooms in the project unit had a data projector and a whiteboard, like the classrooms in the other organisational units.

In early March 2020, the teachers involved in the project attended a one-day workshop on the use of IWBs. The workshop consisted of two parts: a theoretical part on lesson structure and learning settings with digital devices and on the interactive possibilities regarding whiteboard and learning management system, as well

³ The final exam consists of two parts: a) the written exam including four different sub-exams regarding the topics patrol duty, traffic police work, crime prevention and working in a police station and b) a practical examination.

⁴ Due to the positive results during the evaluation period of the project unit, the Bavarian Police was encouraged to continue on the path of digitalising the entire police training and therefore equipped other organisational units with digital devices even before the end of the evaluation of the project unit.

as a practical part where the participants would learn how to handle and use the IWB by trial and error.

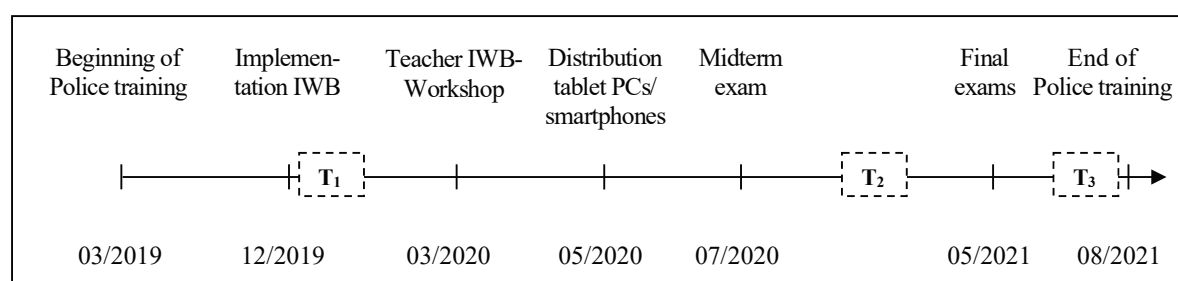
In May 2020, each trainee received a personal tablet PC for their remaining time at the police training until August 2021 supported by a technical briefing in its use. Until the end of their training, the police officer trainees had the opportunity to use their tablet PCs as a fully-fledged learning medium during and after lessons (e.g., taking lecture notes, looking things up on the internet, preparing for exams).

In addition, all the trainees in the project unit received a personal smartphone and a technical introduction to

it. The use of the smartphone in the class was at the discretion of the respective teacher (e.g., to look things up on the internet or to do police queries or quizzes).

Due to the unsteady course of the COVID-19 pandemic, different instructional settings had to be implemented from March 2020 to August 2021 in addition to the usual classroom teaching, e.g., learning and practising in smaller groups and/or online teaching. To measure the influence of the digital devices in the classroom, three surveys were conducted: January 2020 (T_1), November 2020 (T_2) and July 2021 (T_3) (cf. Figure 2).

Figure 2. Overview of the research design



Note: IWB = interactive whiteboard

Instrument/Measures

The survey items were developed based on a previous research by Gerrick and Eickelmann (2017) and Renz, Rayiet and Soltan (2012) on the use of digital devices in the classroom.

Student engagement: To measure the influence of digital devices on student engagement, three items were asked on a 5-point Likert scale ranging from 1 (*negative*) via 3 (*neutral*) to 5 (*positive*) for tablet PCs and smartphones, e.g., "Using my tablet PC during class has influenced my active participation".

Learning interest: The parameter learning interest was measured with two items "Using the digital device during class helps me to develop a greater interest in learning" and "Using the digital device motivates me and raised my interest" using the same Likert scale as mentioned above.

Frequency of usage behaviour: In order to find out how often and for what purpose the mobile devices were used, the two scales *classroom-related behaviour* and *field-related behaviour* (e.g., "How many times do

you use your smartphone to check administrative-related applications?") were developed on a 5-point Likert scale (1 = never; 3 = several times a week; 5 = several times a day). The scale classroom-related behaviour comprised five items (e.g., "How many times do you use your tablet PC to take lecture notes?") and the scale field-related behaviour, also comprised five items (e.g., "This is how often I use my tablet PC to get information about my organisational unit.").

Visualisation of instructional content: To measure the influence of the interactive whiteboard on visualisation methods of instructional content, a visualisation scale was developed on a 5-point Likert scale from 1 (*negative*) to 5 (*positive*) with three items (e.g., "The use of the interactive whiteboard has changed the visualisation of the instructional content in class.").

Academic Performance: In order to measure the impact of digitalisation at the project unit, two objective performance measures were taken: the results of the written midterm exams in July 2020 and the results of the written final exam in May 2021. Both exams consisted of four sub-examinations on the topics patrol duty,

traffic police work, crime prevention, and working in a police station.

Mobile devices as operational tools: An important reason for the digitalisation of the Bavarian police training, apart from the intended improvement of the police training in general, is the concomitant improvement of user competence regarding tablet PCs and smartphones as operational tools. In order to find out whether the classroom implementation of those two mobile devices had improved the practical use of those devices in their future purpose as operational tools, the following item was used “The use of the tablet PC has improved my practical competence in using the tablet PC as an operational device”. The item ranged on a 5-point Likert scale from 1 (negative) to 5 (positive).

Further measurements: Two additional questions were asked at the end of each survey. The first question asked the trainees to evaluate the project. Using a positive statement, the trainees rated their impression on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The second question aimed at how the police officer trainees rate the future importance of traditional (e.g., books, worksheets) and digital teaching and learning materials (e.g., tablet PC, videos, learning management systems) in the classroom on a 10-point scale from 1 (*very unimportant*) to 10 (*very important*).

Data collection and analysis

In order to assess the impact of the interactive whiteboards in the classroom, the trainees responded to the first survey in January 2020 (T_1). The second survey was conducted in November 2020 (T_2); half a year after the trainees had received their tablet computers and had started to use the smartphones during practical police training. After the trainees had passed their final exams, the third survey was conducted (T_3) in July 2021 (Fig. 1).

The surveys were conducted using the web-based open-source learning management system ILIAS (Integrated Learning, Information and Work Cooperation System) within the police internal network. All surveys consisted of a questionnaire with 65 items altogether and took approximately 15 minutes to complete.

As the police officer trainees received their tablet computers and smartphones in May 2020, these topics were only covered in the second and third surveys in November 2020 and July 2021 respectively. All anal-

yses were computed in IBM SPSS Statistics 23. To facilitate interpretation, the effect size d for the t -tests ($d = 0.20 \triangleq$ small; $d = 0.50 \triangleq$ medium; $d = 0.80 \triangleq$ large), the effect size η^2 for the ANOVA ($\eta^2 = 0.01 \triangleq$ small; $\eta^2 = 0.06 \triangleq$ medium, $\eta^2 = 0.14 \triangleq$ large) and the correlation coefficient r ($r = 0.10 \triangleq$ small; $r = 0.30 \triangleq$ medium; $r = 0.50 \triangleq$ large) were calculated (cf., Cohen, 1988).

Findings

Student Engagement: The trainees rated their use of tablet PCs as rather positive in terms of engagement after six months on a 5-point Likert scale ($M = 3.69$; $SD = 0.69$) and after eight more months of use ($M = 3.75$; $SD = 0.76$), $t(160) = 0.51$, $p = .79 > .05$, $d = 0.08$. In contrast, the trainees rated the use of smartphones in the classroom as ineffective or slightly negative in terms of their own engagement after six months of use ($M = 2.86$; $SD = 0.60$) and after another eight months of use ($M = 2.85$; $SD = 0.76$), $t(160) = -0.69$, $p = .95 > .05$, $d = -0.01$.

Learning interest: The results for the influence on learning interest showed an overall positive influence for the tablet PCs after six months ($M = 3.72$; $SD = 0.68$) and after eight more months of use ($M = 3.76$, $SD = 0.77$), $t(159) = 0.33$, $p = .75 > .05$, $d = 0.05$. Almost identically to the analysis of the influence on student engagement, the smartphones had no or a slight negative influence on learning interest after six months ($M = 2.83$; $SD = 0.63$) and also after eight further months of use ($M = 2.86$; $SD = 0.77$), $t(159) = 0.05$, $p = .96 > .05$, $d = 0.01$.

The strongest influence on the police officer trainees' interest resulted from the implementation of the interactive whiteboard (IWB). The conducted ANOVA analysis shows that after three weeks of using the interactive whiteboard, there was a slightly positive influence the trainees' interest ($M = 3.41$; $SD = 0.66$), which increased significantly after ten months of use ($M = 3.88$; $SD = 0.79$) and again marginally after 18 months of use ($M = 3.94$; $SD = 0.88$), $F(2,254) = 12.62$, $p < .001$, $\eta^2 = 0.09$. The subsequent *Tukey post-hoc* analysis revealed a significant difference between the first measurement and the second measurement (.47, 95%-CI[.20,.73]) and between the first and the third measurement (.53, 95%-CI[.25,.82]).

Frequency of use: As Table 1 shows, there is a difference in the frequency of use of tablet PCs and smart-

phones regardless of classroom use patterns or field-related behaviour. On average, the trainees reportedly used the tablet PCs between about once a day and several times a week with a slight preference towards classroom hours. In contrast, the use of smartphone

during police training was sporadic throughout the sample period, with significant increases in frequency at low levels after the first survey in November 2020 for both usage patterns.

Table 1. Influence of mobile devices on learning interest and engagement as well as frequency of use of mobile devices in regard to different usage behaviour in the context of police training

		Nov. 20 (T ₁) M ₁ (SD)	July 21 (T ₂) M ₂ (SD)	t-value	Effect size d
Tablet PC					
Motivation	learning interest	3.72 (0.68)	3.76 (0.77)	0.33	0.05
	engagement/activation	3.69 (0.69)	3.75 (0.76)	0.51	0.08
Usage pattern	classroom-related	3.38 (0.93)	3.48 (1.00)	0.70	0.11
	Field-related	3.29 (0.90)	3.23 (1.07)	-0.36	-0.06
	overall use	3.33 (0.79)	3.36 (0.95)	0.18	0.03
Smartphone					
Motivation	learning interest	2.83 (0.63)	2.86 (0.77)	0.05	0.01
	engagement/activation	2.86 (0.60)	2.85 (0.76)	-0.69	0.01
Usage pattern	classroom-related	1.18 (0.31)	1.45 (0.61)	3.55**	0.56
	field-related	1.18 (0.41)	1.33 (0.62)	1.95*	0.31
	overall use	1.18 (0.30)	1.39 (0.59)	2.97*	0.47

Note: * = $p < 0.05$; ** = $p < 0.01$;

M₁ = 11/20 (six months after implementation); M₂ = 07/21 (fourteen months after implementation)

Scale_{Motivation}: 1 = negative, 3 = neither negative nor positive, 5 = positive

Scale_{Usage pattern}: 1 = never, 2 = several times a month, 3 = several times a week, 4 = once a day, 5 = several times a day

Furthermore, Table 2 shows that there are significant positive correlations between the frequency of tablet PC use – regardless of the usage behaviour – and the learning interest, respectively engagement, of the po-

lice officer trainees. In contrast, the frequency of smartphone use does not correlate significantly with learning interest and engagement.

Table 2: Relationship between frequency of use of mobile devices in relation to learning interest and engagement of police officer trainees in terms of different usage behaviour.

	(1)	(2)	(3)	(4)	(5)
Tablet PC					
(1) Overall frequency use	-	0.89**	0.89**	0.51**	0.44**
(2) Frequency classroom behaviour		-	0.58**	0.53**	0.49**
(3) Frequency field-related behaviour			-	0.37**	0.29**
(4) Learning interest				-	0.87**
(5) Engagement/activation					-
Smartphone					
(1) Overall frequency use	-	0.91**	0.92**	0.10	0.12
(2) Frequency classroom behaviour		-	0.68**	0.07	0.10
(3) Frequency field-related behaviour			-	0.10	0.12

(4) Learning interest	-	0.97**
(5) Engagement/activation	-	-

Note: ** = $p < 0.01$

Visualisation of teaching content

The police officer trainees stated a quite positive influence of the interactive whiteboard on the visualisation of instructional content in the classroom after one month of use ($M = 3.96$, $SD = 0.58$). After ten months ($M = 4.44$, $SD = 0.66$) as well as after eighteen months ($M = 4.54$, $SD = 0.52$) the influence of the interactive whiteboard on visualisation of the teaching content increased significantly, $F(2,254) = 23.31$, $p < .001$, $\eta^2 = 0.16$. The following *Tukey post-hoc* analysis revealed a signif-

icant difference between the first measurement and the second measurement (.48, 95%-CI[.26,.68]) and between the first and the third measurement as well (.58, 95%-CI[.35,.80]).

Academic performance

Table 3 shows mixed results on the academic performance of the project unit compared to the reference unit.

Table 3. Descriptive statistics between the project unit and its reference units in terms of grade points for the midterm examination and the final written examination.

		N	M (SD)	Median	Min	Max
Midterm exam	Project unit	93	9.23 (1.95)	9.50	5.50	12.75
	Reference units	629	9.09 (1.85)	9.00	4.25	13.50
Final written exam	Project unit	92	8.77 (1.67)	8.94	5.12	12.75
	Reference units	617	8.83 (1.83)	8.75	4.00	13.62

Note: Grading scale: 0.00-1.99 \triangleq very poor (fail), 2.00-4.99 \triangleq unsatisfactory (fail), 5.00-7.99 \triangleq satisfactory, 8.00-10.99 \triangleq good, 11.00-13.49 \triangleq very good, 13.50-15.00 \triangleq excellent

With regard to the midterm exam, the project unit achieved a slightly higher grade points average ($M = 9.23$, $SD = 1.95$) than the reference units ($M = 9.09$, $SD = 1.85$). However, the following *t-test* showed no significant difference between both groups $t(720) = 0.70$, $p = .48 > .05$, $d = 0.08$. The results of the final written exam also revealed no significance difference between the project unit ($M = 8.77$, $SD = 1.67$) and the reference units ($M = 8.83$, $SD = 1.83$), $t(707) = -0.29$, $p = .77 > .05$, $d = 0.03$.

Mobile devices as operational tools

In addition to the use of the digital devices as learning medium, there is a high expectation in the Bavarian Police that the implementation of tablet PCs and smartphones will improve the use and handling of both devices as operational tools for future police officers. The following analyses show that the police officer trainees consider the use of a tablet PC as a later operational tool to be helpful both after six months ($M = 4.43$, $SD = 0.69$) and after a further eight months ($M = 4.37$, $SD = 0.66$). The subsequent *t-test* showed no significant change over the course of the project,

$t(159) = 0.53$, $p = .60 > .05$, $d = -0.09$. Despite the fact that the smartphone was only used sporadically during the pilot project (Table 1), the trainees rated the use of the smartphones as slightly positive after six months ($M = 3.38$, $SD = 0.83$) and after 14 months ($M = 3.33$, $SD = 1.05$) in terms of them handling it as a future operational tool. There was no significant time trend, $t(159) = 0.38$, $p = .71 > .05$, $d = 0.06$.

Further measurements – evaluation of the digital pilot project and importance of the use of future teaching and learning material

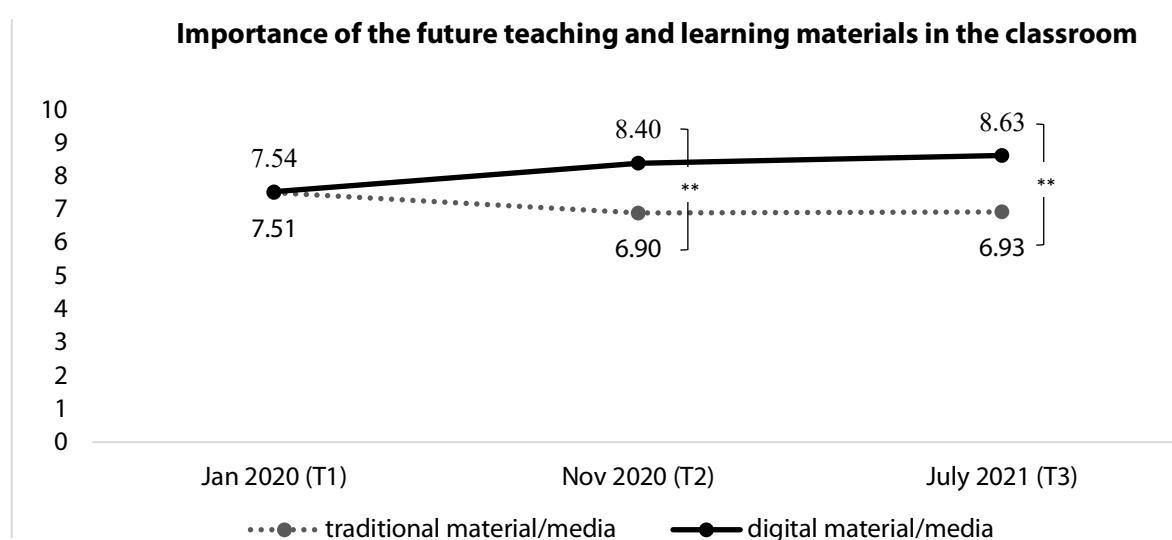
The results of the evaluation of the digital pilot project based on the project unit police officer trainees' perception show that the trainees rated the pilot project quite positively at the first measurement point - one month after the start (January 2020) ($M = 4.23$, $SD = 0.83$). In the course of the digital pilot project, the positive assessment on the pilot project increased at the second measurement point in November 2020 ($M = 4.44$, $SD = 0.73$) and at the end of the police training in July 2021 ($M = 4.56$, $SD = 0.53$). The following ANOVA analysis shows a small but significant effect

between the three individual measurement points, $F(2,254) = 4.52, p < .05, \eta^2 = 0.03$.

The analysis on the importance of the use of future teaching and learning materials on a scale of 0 to 10 shows at the first measurement point (January 2020) that both traditional ($M = 7.51, SD = 2.65$) and digital teaching and learning materials in the classroom ($M = 7.54, SD = 2.56$) are considered equally important by the trainees. In the course of the pilot project, both lines run in opposite directions, as figure 3 shows. The importance of digital teaching and learning materials in the classroom increases continuously in November 2020 ($M = 8.40, SD = 1.60$) and at the third measurement point in July 2021 ($M = 8.63, SD = 1.34$).

The following ANOVA analysis shows that the police officer trainees rated the importance of using future digital teaching and learning materials significantly higher over the course of the pilot project (January 2020 until July 2021), $F(2,257) = 7.58, p < .01, \eta^2 = 0.06$. On the other hand, the importance of traditional teaching and learning materials in the classroom decreased at the second measurement in November 2020 ($M = 6.90, SD = 2.57$) and levelled off at the third measurement in July 2021 ($M = 6.93, SD = 2.65$). However, the conducted ANOVA-analysis shows no significant decrease during the course of the pilot project, $F(2, 257) = 1.57, p = .21 > .05, \eta^2 = 0.01$.

Figure 3. Assessment of the importance of future teaching and learning materials in the classroom over the course of the digital pilot project.



Note: ** = $p < 0.01$

Scale: 0 = very unimportant to 10 = very important

Regarding the direct comparison between the future use of both forms of teaching and learning materials and media, the following *t*-tests show a significant difference at the second measurement date, $t(180) = 4.72, p < .001, d = 0.70$ and at the third measurement date, $t(138) = 4.80, p < .001, d = 0.81$ in the preference for the importance of using digital teaching and learning material.

Discussion

This study focused on the relation between the use of digital devices in the classroom and engagement, learning interest, and academic performance of police officer trainees in police training from December 2019 to August 2021. The study examined whether the use of interactive whiteboards improves teaching methods (visualisation) and whether the use of mobile devices (tablet PCs and smartphones) improves the handling of them as operational tools.

The results provide some new insights on the impact of digital devices on learning behaviour and academic performance in police training. Firstly, within a short time of their implementation, the use of the interactive whiteboards was related to a positive development in learning interest. The same trend was found in relation to personal tablet PCs. Secondly, digital devices that are not used regularly, interfere with the learning process and participation in the classroom. Thirdly, the use of digital devices in police training does not show a significant influence on academic performance at this stage of implementation. Fourthly, the regular practical use of tablet PCs during police training helps to prepare the trainees to use and handle their tablet PCs as operational tools. Finally, the new generation of police officer trainees tends to prefer to be taught via digital devices and digital teaching material.

Conclusion and practical implications

Digital devices will play a crucial part in teaching and learning at every future classroom setting including police education and training (Fuchs, 2022). Our pilot study has very important empirical results for further action and has encouraged the Bavarian police to continue on the chosen path in digitalising the police training. Therefore, the question for the future of police training – at least for the Bavarian police training – is not whether digitally supported teaching should take place, but with which digital tools, in which way and which administrative departments should be in charge and should work with which means.

The conducted pilot study showed that, above all, interactive whiteboards and personal tablet PCs can immediately improve teaching and learning settings in police training. Nevertheless, there are areas where the conventional approach to police training is more useful or a mix of both the old and the new achieves the best results. Hence, to reach the full potential of digital devices in educational settings, it is crucial that teachers and policy makers find strategies to integrate mobile devices into teaching concepts and curricula and find ways to use the unique features of mobile devices (e.g., mobile game-based learning) and to solve

specific pedagogical challenges (e.g., distraction, superficial information processing) (cf. Sung, Chang & Liu, 2016).

Thus, what can police training learn from the findings of the pilot study? Firstly, qualification and training for teachers and instructors have a key role in the integration of technology into teaching and practical training. In addition, the training courses should have a high practical relevance, where the various digital devices can be actively tried out.

Secondly, both the faculty as well as the administration of police training have to embrace the digital transformation and the changes it entails. Therefore, an overall media-pedagogical concept is needed that explains the vision, the opportunities but also the challenges, and, above all, the necessary action and implementation steps of the digitalisation in police training.

Thirdly, hardware (digital devices) and software (e.g., learning management system (LMS)) as well as the technical infrastructure must function properly to ensure acceptance by police teachers and trainees. Furthermore, it is recommended to integrate the LMS into the police network so that all learning and teaching materials – both non-confidential as well as confidential – can be shared. Moreover, the integration of the LMS into the police network offers the possibility to provide the complete police training content via LMS for in-class teaching as well as distance and hybrid learning models.

Fourthly, the learning and teaching materials need to be adapted to the new learning and teaching context, therefore new forms of learning and teaching material need to be created e.g., interactive videos, quizzes, wikis, learning modules. Finally, in order to improve teaching and learning in combination with digital devices and to meet the requirements of the new generation of police officer trainees, *new* teaching forms such as Just-in-time teaching (Novak, 2011) and Flipping the classroom (Davies, Dean & Ball, 2013; McLean et al., 2016) should be tried out.

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