

# Teachers' Efficacy of Social Modeling to Enhance Experience of Employing Interactive Whiteboards in High Schools

MM Mokoena, S Simelane-Mnisi and A Mji

Tshwane University of Technology, South Africa

**Abstract:** This paper reports on teachers' use of role modelling in the use of the interactive whiteboards (IWB) in high schools. The Gauteng Department of Basic Education initiative of the paperless classroom whereby IWBs and tablets were utilised in public schools motivated the study. Bandura's theory of social modelling was selected to investigate how teachers could model good traits and practices in the use of IWBs in teaching and learning. Social learning theory revealed that we learn to mimic others by studying their behaviour, and we learn to behave in specific ways by watching others do what they do. The research has not come across studies that investigated the teachers' self-efficacy in social modeling in the use of the IWB. This paper will fill a gap in the literature in this area. Participants were teachers from 41 high schools in Tshwane North District, Gauteng, South Africa. This paper adopted a mixed method approach. Quantitative data were collected using Bandura's adapted self-efficacy instrument with the focus on the efficacy to make use of social models construct. Qualitative data were collected through semi-structured interview questions. Quantitative data were analysed using SPSS frequency distributions and percentages. Qualitative data were analysed with the aid of Atlas.ti. The results show that 71.5% teachers reported that they did not liaise with local institutions to assist them with the integration of ICT in teaching and learning. It was found that teachers consulted school-based information technologist personnel and fellow teachers to assist with the IWB, while on the other hand teachers indicated that they did not consult or have a mentor to assist with the integration of the IWB. It is recommended that schools should have information technology specialists to support teachers. Teachers should collaborate with nearby tertiary institutions to improve digital skills.

**Keywords:** Behaviour, Efficacy of social modelling, Interactive whiteboards, High school

## 1. Introduction

The purpose of the study is to evaluate teachers' efficacy of social modeling to enhance experience of employing interactive whiteboards in high schools. Teacher self-efficacy offers a prominent foundation for explaining the processes that influence and normalise human conduct (Shi, Peng, Yang & Macleod, 2018). In this case, literature reports that teacher self-efficacy affects practice and beliefs about digital technologies as well as the extent to which a teacher believes technology can enhance teaching practice and student learning (Burke, Schuck, Aubusson, Kearney & Frischknecht, 2018). Technology integration is regarded as a multi-stage and complex process which involves teachers' attitudes towards technology use in teaching and learning (Pamuk, 2021). Furthermore, the introduction and application of IWBs in the teaching and learning platform cannot be ignored (Pehar, 2019). In this case mentoring, role modelling, and consulting other resources in the use of the interactive whiteboard (IWB) plays a vital role in improving teachers' efficacy in the use

of IWBs. The relevancy of IWBs to teachers' self-efficacy should be understood from its importance as a teaching tool. Here the IWB is viewed as an important teaching and learning tool due to its features that enable interaction environment and it is easier for students to understand the subject using it (Ormanci & Çepni, 2020).

Mentoring and mentorship is a critical aspect of information and communication technology (ICT) to an extent that it is necessary that it become part of the training programs at institutions of higher education (Okoye, Hosseini, Arrona-Palacios & Escamilla, 2021), and further mentorship is growing tremendously (Malviya, Malviya, Saxena & Dhere, 2021). It is noted that once teachers are familiar with ICT programs, they in turn mentor other teachers (Ahmed & Gwamna, 2020). The ability to act and assume the mentorship role is influenced by the individual teacher's self-confidence, self-efficacy, and self-motivation strength in the use of ICT (Schuessler, 2020). In addition, pre-service teachers who are more equipped with technological

knowledge stand at an advantage to act as mentors, in which they mentor in-service teachers to gain techno-pedagogical knowledge (Aşık & Kuru-Gönen, 2020). Peer mentoring plays a vital role in overcoming ICT barriers (Top, Baser, Akkus, Akayoglu & Gurer, 2020). In this case mentoring forms an informal support system (Gramm, 2021). On the other hand, role modelling provides a possible mode of teacher role modelling in the form of the teacher's active behaviour (Cheung, 2020). In addition, role modelling allows mentee to learn new ideas, concepts or skills through observing the mentor (Ajayi, 2020; Muyengwa & Jita, 2021). The ICT can be used for role-playing games in which it creates an atmosphere where contact between parties involved (Abduvali & Guljahon, 2019).

## 2. Research Questions

This paper posed the question: What is the teachers' efficacy of social modeling to enhance experience of employing Interactive whiteboards in high schools. To provide more clarity to the primary research question, 5 secondary questions were posed; 3 questions from the Efficacy to make use of social models (EMSM) questionnaire and, 2 questions from semi-structured interviews. Questions from the questionnaire were: Do teachers make use of role models to obtain more information about the use of IWB? Do teachers use the internet and other digital resources to obtain more information about the use of IWB? Do teachers get local colleges and universities involved in the integration of ICT in teaching and learning? And interview questions were: Did you consult other resources or other teachers who successfully integrated IWB in their teaching practice? Do you have a mentor that encourages you to use the IWB even if you encounter challenges?

## 3. Theoretical Framework

This study is grounded on Bandura's (1977) theory of self-efficacy. Bandura (1977) state that self-efficacy is the individual's belief about his/her capabilities to organize and execute the courses of action required to manage prospective situations. Bandura (1997) identifies four mechanisms that anchor the theory of self-efficacy, namely, performance outcome; social modelling or vicarious experiences; verbal or social persuasions; and physiological states. However, this study is aligned to the social modelling mechanism. Furthermore, Bandura (1977)

explains that social modelling refers to a situation whereby seeing other teachers who are using IWB succeed by sustained effort raises the observers' beliefs that they too possess the capabilities to master comparable activities to succeed. This study seeks to evaluate teachers' efficacy of social modeling to enhance experience of employing interactive whiteboards in high schools. The self-efficacy theory provides an insight into the high or low self-efficacy state of teachers on whether they observed other teachers who successfully presented their lesson using IWB. On the other hand, it is crucial to also observe if teachers do consult local universities and other technological sources to obtain more information about the effective use of IWB in high school.

## 4. Related Literature

Consulting other resources, role modelling, and mentoring are key to teachers' self-efficacy and attitudes towards teaching tools. A beginning teacher needs support to become an effective teacher (King, Donaldson & Tomlinson, 2020). In terms of IWB mentoring, Top et al. (2020) mentoring in technology use will help teachers and users in the education environment to overcome barriers in ICT integration and increase technology use. It is further found that mentoring teams or experts in ICT, remote work, and online collaboration and communication contribute to the rapid and real establishment of knowledge (Kralj, 2021). In a survey conducted in three universities in Vietnam, it was found that educational technology teacher-educators do not engage in reciprocal intergenerational mentoring (Tran, 2021). Failure for ICT intergenerational mentoring negates Miller's (2017) call that the young generation born into the technological era should assist their teachers with technology while the pre-technology generation should teach the younger generation how the technology could be used in education. Furthermore, a study conducted in Thailand about Seamless learning involving undergraduate students' English writing skills revealed an improvement in cases where peer-assisted learning was implemented (Bacon, Satienchayakorn & Prakaiborisuth, 2021). Literature further showed technology mentorship improved the teachers' use of ICT which is an important aspect of ICT integration (Top et al., 2020). In terms of IWB role models, Muir, Dörnyei & Adolphs (2019:7) describes a role model as "Someone that you respect and that you want to become more like...". Furthermore, the same authors point out that role models exercise

a significant impact in influencing an individuals' beliefs, attitudes, and values.

## 5. Research Methods

This paper employs a mixed method approach. The mixed method allows the paper to explore both numeric and descriptive results from the quantitative and qualitative approaches. In addition, the mixed method allows this paper to cover a larger sample of the population.

### 5.1 Participants

The participants in this paper are 123 teachers from 41 high schools in the Gauteng province. Table 1 shows the biographical data of participants. Based on the biographical data, 57.7% of the participants were female. Furthermore 48% of the participants had a teaching experience ranging between 11-20 years. In addition, 69.1% of the participants had received training in the use of IWBs, and 65.9% had

an honours degree qualification and 74.8% were post level 1 teachers. Participants were selected based on the location of their schools in relation to access to interactive whiteboards beneficiary initiative provided by the Gauteng department of education (GDE). This selection of participants is in support of what White (2005) and McMillan & Schumacher (2001) stated that participants could be selected using convenience sampling. In this case participants are selected because they are available and accessible.

### 5.2 Data Collection Instruments and Procedure

The quantitative data were collected by means of the Teacher Self-efficacy questionnaire involving 123 participants. In this regard the standardised Teacher Self-efficacy (TSE) questionnaire developed by Bandura (2006) was adapted and used. Although the Teacher self-efficacy questionnaire is a 28-item inventory comprising of 6 primary

**Table 1: Participants Biographical Data**

|                                 |                  | No. | %    |
|---------------------------------|------------------|-----|------|
| Gender                          | Female           | 71  | 57.7 |
|                                 | Male             | 52  | 42.3 |
| Age in range                    | 20 – 29          | 23  | 18.7 |
|                                 | 30 – 39          | 38  | 30.9 |
|                                 | 40 – 49          | 49  | 39.8 |
|                                 | 50 and above     | 13  | 10.6 |
| Teaching experience             | 0 – 10           | 42  | 34.1 |
|                                 | 11 – 20          | 59  | 48   |
|                                 | 21 and above     | 22  | 17.9 |
| Highest qualification           | Certificate      | 1   | .8   |
|                                 | Diploma          | 20  | 16.3 |
|                                 | Honours          | 81  | 65.9 |
|                                 | Masters          | 20  | 16.3 |
|                                 | Doctorate/PhD    | 1   | .8   |
| Current Position                | Deputy Principal | 5   | 4.1  |
|                                 | DH               | 18  | 14.6 |
|                                 | Teacher          | 92  | 74.8 |
|                                 | ICT Coordinator  | 16  | 13.0 |
| Interactive whiteboard training | Formal           | 85  | 69.1 |
|                                 | Informal         | 29  | 23.6 |
|                                 | No training      | 9   | 7.3  |

Source: Authors

sub-scales, this paper focuses on results from the fourth sub-scale: efficacy in making use of social models (EMSM). Qualitative data was collected using semi-structured interview questions. The interview results provided a greater depth of meaning to the primary research question from 18 participants. In addition, semi-structured interview questions provide a much higher response rate (McMillan & Schumacher, 2001) and allows participants to comment on broadly defined issues (Bless, Higson-Smith & Sithole, 2013). Appointments were made with participants at the schools they were stationed at and audio from interviews was recorded through a portable smartphone audio recorder.

### 5.3 Data Analysis

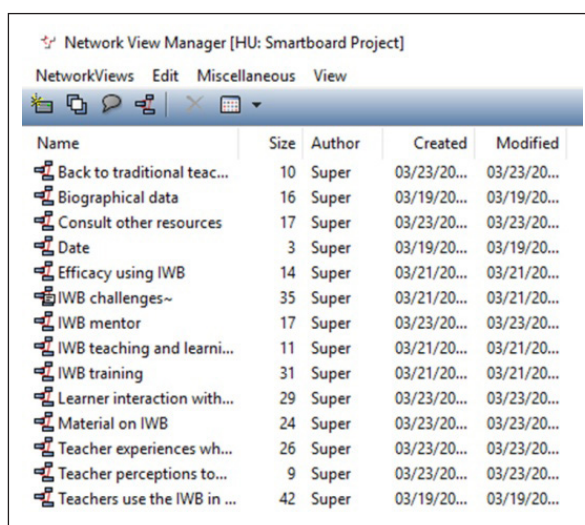
Quantitative data and qualitative data were analysed separately using different instruments. Firstly, quantitative data was analysed using SPSS version 25. The biographical data of the participants as well as the Teacher Self-efficacy in the use of IWB questionnaire were analysed using frequency distributions

including percentages. The qualitative analysis software Atlas.ti 6.2 was used to analyse data from semi-structured interviews. In this case the hermeneutic unit called Smart board Project was created which allowed data to be coded and generate quotations. From the Smart board Project, 14 conceptual networks emerged. These networks related to biographical data, consult other resources, IWB mentor, IWB training, IWB challenges, etc. Figure 1 shows the conceptual networks that emerged from qualitative data analysis.

## 6. RESULTS

The three items relating to Efficacy to make use of social models are represented in Table 2. In terms of the first question – EMSM1, participants had to indicate whether they were able to make use of role models to obtain more information about the use of IWB. The results showed that 52.0% indicated that they moderately make use of role models. In terms of the second question – EMSM2, participants had to indicate whether they were able to use the

**Figure 1: Conceptual Networks that Emerged from Analysis**



| Name                        | Size | Author | Created     | Modified    |
|-----------------------------|------|--------|-------------|-------------|
| Back to traditional teac... | 10   | Super  | 03/23/20... | 03/23/20... |
| Biographical data           | 16   | Super  | 03/19/20... | 03/19/20... |
| Consult other resources     | 17   | Super  | 03/23/20... | 03/23/20... |
| Date                        | 3    | Super  | 03/19/20... | 03/19/20... |
| Efficacy using IWB          | 14   | Super  | 03/21/20... | 03/21/20... |
| IWB challenges~             | 35   | Super  | 03/21/20... | 03/21/20... |
| IWB mentor                  | 17   | Super  | 03/23/20... | 03/23/20... |
| IWB teaching and learni...  | 11   | Super  | 03/21/20... | 03/21/20... |
| IWB training                | 31   | Super  | 03/21/20... | 03/21/20... |
| Learner interaction with... | 29   | Super  | 03/23/20... | 03/23/20... |
| Material on IWB             | 24   | Super  | 03/23/20... | 03/23/20... |
| Teacher experiences wh...   | 26   | Super  | 03/23/20... | 03/23/20... |
| Teacher perceptions to...   | 9    | Super  | 03/23/20... | 03/23/20... |
| Teachers use the IWB in ... | 42   | Super  | 03/19/20... | 03/19/20... |

Source: Authors

**Table 2: Teacher's Rating on Use of IWB Self-Efficacy**

| Scale   | Cannot do at all (0-40%) | Moderately can do (50-80%) | Highly certain can do (90-100%) |
|---|--------------------------|----------------------------|---------------------------------|
| <b>Efficacy to make use of social models (EMSM)</b> |                          |                            |                                 |
| EMSM1   | 46 (37.4%)               | 64 (52.0%)                 | 13(10.6%)                       |
| EMSM2   | 65 (52.8%)               | 51 (41.5%)                 | 7 (5.7%)                        |
| EMSM3   | 88 (71.5%)               | 30 (24.4%)                 | 5 (4.1%)                        |

Source: Authors

internet and other digital resources to obtain more information about the use of IWB. Here, the results revealed that 52.8% of the teachers were not able to use the internet and other digital resources to obtain more information about the use of IWB. This finding suggested that teachers had challenges of using the internet and other digital resources to get more information about the use of IWB. And finally, the third question – EMSM3 required participants to indicate whether they were able to get local colleges and universities involved in the integration of ICT in teaching and learning. In this regard the results showed that 71.5% of the teachers were not able to get local colleges and universities involved in the integration of ICT in teaching and learning. The implications from this finding were that teachers or schools did not liaise with local colleges and universities to assist them with the integration of ICT in teaching and learning.

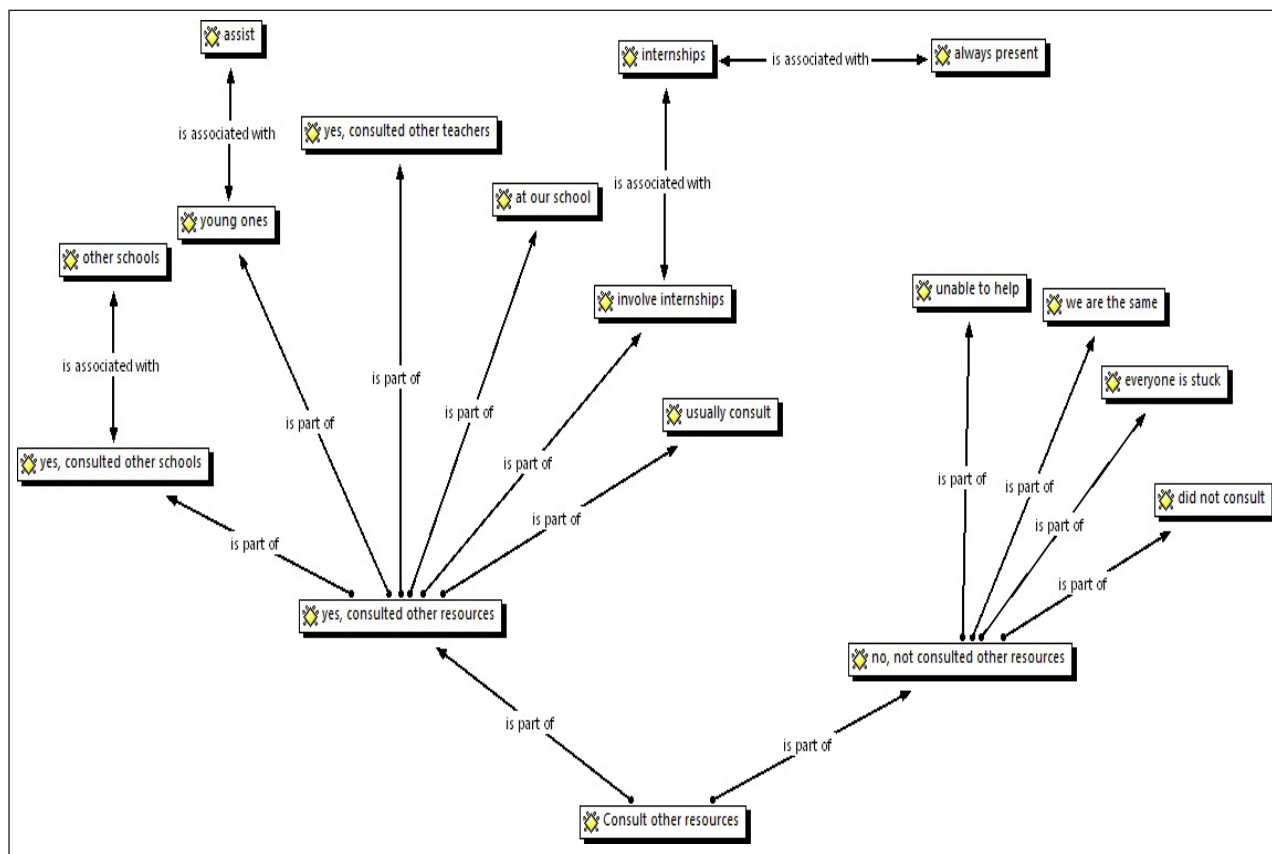
The following are the results from the interview question: Do you consult other resources or other teachers who successfully integrated IWB in their teaching practice? Here, the paper presents mixed

findings reflecting both the positive and negative results. In this case 17 codes were created and clustered into 2 categories that related to the theme of *consult other resources*. These categories were: *yes, consulted other resources* and *no, not consulted other resources*. Figure 2 shows the conceptual network relating to consult other resources.

In terms of category 1, *yes, consulted other resources*; the findings revealed that most of the teachers make use of other teachers in order to effectively use the IWB. Here, teacher Zulu was recorded saying, "Yes. Sometimes they are trying to assist me". In addition, teacher Zane said, "Yes, sometimes I teach other teachers". And teacher Khumalo said that "Yes, I consult teachers from other schools because when we are attending meetings we normally use the IWBs. So, they show us how to access other information that we do not know".

In terms of category 2, *no, not consulted other resources*; the findings showed that teachers did not consult other resources or other teachers to learn more about the IWB. Here, teacher Zwane was

Figure 2: The Conceptual Network Relating to Consult Other Resources



Source: Authors

recorded saying, "No, each one of us is stuck. Even if you can go to another teacher to ask for assistance, he/she will not be able to help you", and teacher Jane said, "Up to so far no, I have not consulted anyone".

In terms of the interview question: *Do you have a mentor that encourages you to use the IWB even if you encounter challenges?* Here 17 codes were generated and were grouped into 3 categories that related to the theme of *IWB mentor*. These categories showed mixed results presented as: *yes mentor*, *sometimes*, and *no mentor* as illustrated in Figure 3 below.

In terms of category 1, *yes mentor*; teacher John said, "Yes, there is an IT technician in our school who helps us with that". This finding was further supported by teacher Phala who stated that, "Yes, my school-based IT", while teacher Patrick said, "Yes, I have a mentor from district". Finally, teacher Ben was recorded saying, "I became the mentor for most of the educators. So, I am the one who is consulted".

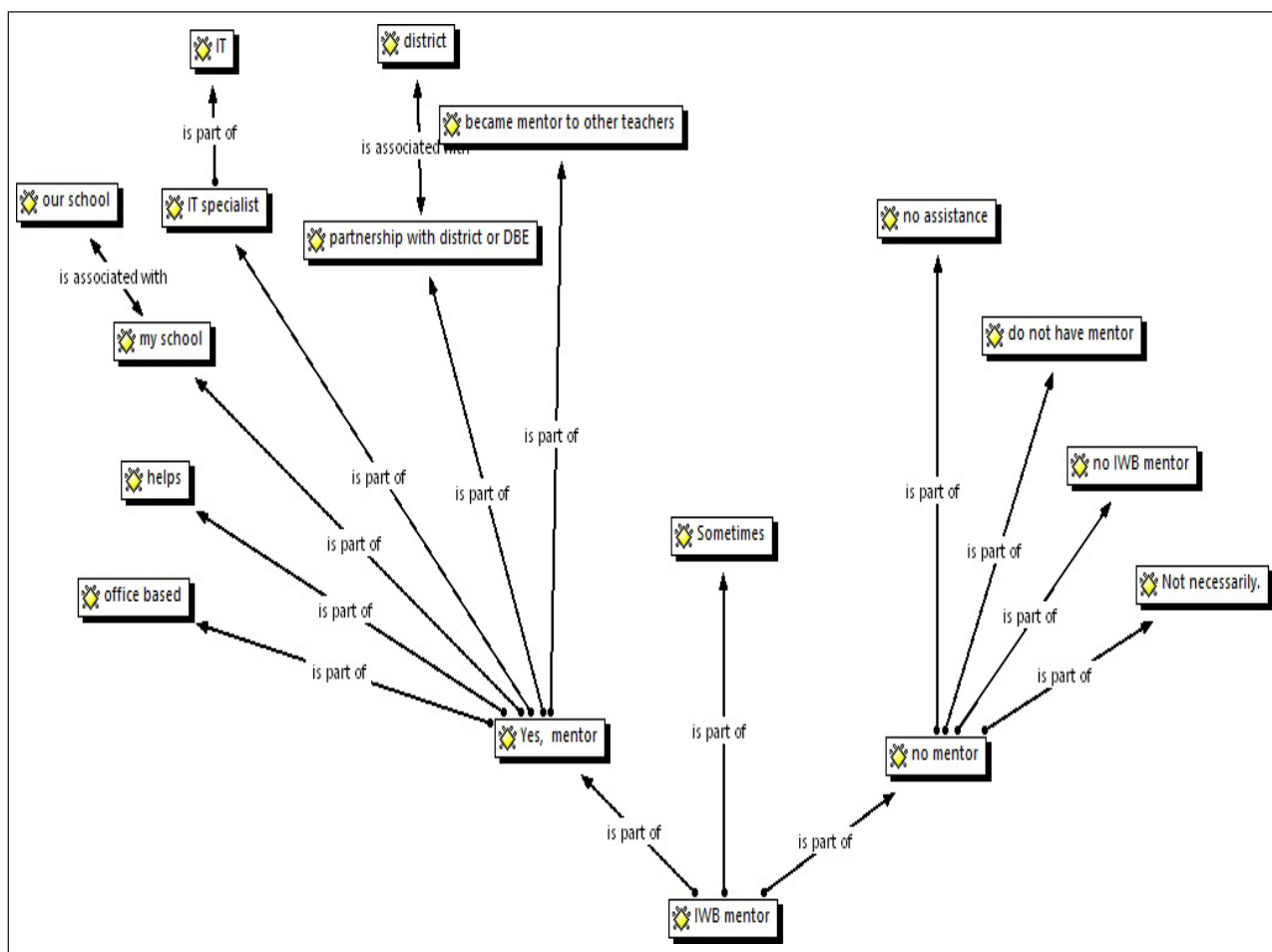
In terms of category 2, *sometimes*; teacher Zondi said, "Sometimes when I encountered the problems, I will consult the IT".

Concerning category 3, *no mentor*; teacher James said, "No, I do not have a mentor", and teacher Mooka indicated that, "So far no, there is no mentor or anyone who is assisting".

## 7. Discussions and Conclusions

The purpose of the study was to evaluate teachers' efficacy of social modeling to enhance experience of employing interactive whiteboards in high schools. The results are discussed with reference to existing literature. In order to understand the teachers' efficacy of social modeling to enhance experience of employing Interactive whiteboards in high schools. Firstly, the study recorded and analysed the participants, biographical data. Here it was found that 65.9% of the teachers had an eleven years and above

Figure 3: The Conceptual Network Relating To Category of IWB Mentor



Source: Authors

teaching experience, and 69.1% had received training in the use of the IWB. The training was provided by district officials, and IT personnel. In literature about the Moroccan GENIE program, training was carried out by training coaches (Ismaili, 2020). This finding concerning teacher training in the use of the IWB implied that ideally most the teachers' efficacy in the use of the IWB should be high. However, the findings of the study showed that teachers' efficacy in the use of the IWB was low, and teachers lacked confidence in the use of the IWB. Literature shows that despite preservice teachers being exposed to ICT and trained in the use of ICT as part of their academic preparation for teaching, challenges that inhibited readiness to integrate ICT in teaching still existed (Bayaga, Bossé & Sevier, 2021). In addition, literature states that the provision of training in the use of IWB and internet access should improve teachers' ICT competencies and integrate ICT into their teaching techniques (Ince-Muslu & Erduran, 2021).

Participants were asked to indicate if they were able to make use of role models to obtain more information about the use of IWB. It is evident from the findings that half of the participants had made use of role models to gain more knowledge about IWB usage. The almost balanced response is in support of Tran (2021) who stated that educational technology teacher-educators do not engage in mentorship. The just above 50% result in support of mentorship agrees with what Top et al. (2020) discovered that mentorship improves ICT integration. The most significant picture painted by this study in relation to mentorship and role models is that teachers perceived school-based IT personnel, district officials, and education partners.

Most of the participants showed that they did not get local colleges and universities involved in the integration of ICT in teaching and learning. This disconnection between IWB practitioners and institutions of teacher training implies that teachers do not receive in-service training from institutions of higher education. In addition, this shows lack of development programmes between universities and schools in ICT field. As a result, teachers will continue to experience challenges in IWB use. This finding is in agreement with the previous findings by Pamuk (2021) who identified a lack of technical and administrative support, technical skills, and training as some of the concerns raised by teachers. It can be observed from the study that concerning the question about consulting other resources, mixed

results were evident. One section of the teachers who participated in the study showed that they consulted other teachers who displayed knowledge of IWB use. In addition, some teachers felt they could provide support to other teachers who were experiencing IWB challenges. Teachers consulted teachers from other schools to assist them with IWB challenges. Notably is that teachers used teacher meetings as a platform for consulting other teachers regarding the use of IWBs. On the other hand, some teachers felt that consulting their colleagues was not fruitful as the same teachers lacked knowledge on the use of IWB. The consultation of other resources was revealed in the data gathered in this study, but this has not appeared as a strong subject in the literature to date.

Also notably is the 52% of teachers who could not use the internet and other digital resources to obtain or learn more about the IWB. The inability access and use the internet in education platforms was also evident in previous studies where it was found that in some instances schools could not utilise the internet for distance education (Abdallah, Zakrepina & Filatova, 2020). Although this study did not report a positive response in relation to teachers' use of the internet, and consulting universities and colleges to gain more knowledge in the utilisation of the IWB, previous literature shows that universities create educational Internet properties that allow to get education online, lots of Internet portals are available, creating the possibility to get the immediate link to open discourses from wherever in the globe (Abdallah et al., 2020). The importance using web or internet is further emphasised by Gadakchyan, Kapitonova, Treboukhina & Ustinova (2020) who stated that web or internet increases the platform for creative interaction, and searching for training resources (Tristani, Tomasone, Fraser-Thomas & Bassett-Gunter, 2020).

Teachers' use of role modelling, mentorship, and ability to consult other resources in the use of IWB is critical for teachers' efficacy in the use of IWB. The three aspects mentioned in this study promotes opportunities for collaboration and motivation, a view shared by Sáez-López, Cózar-Gutiérrez, González-Calero & Carrasco (2020). This study concludes that on average the most of the teachers' efficacy of social modeling was found to be lower than average. It is further concluded that lack of participation in mentoring, role mentoring, and consulting other resources could have been as a

result of lack of such opportunities in the sampled community.

## 8. Recommendations

In order to improve teachers' efficacy of social modeling to enhance experience of employing Interactive whiteboards in high schools, the study recommends that schools should have a mentors attached to them. Teachers should know who to turn to in case of IWB support. Although teachers had received training, it is evident that such training did not empower teachers enough to elevate their efficacy in IWB use. Therefore, the study recommends that IWB teacher training should include the ability to utilise the internet to consult other resources.

## References

- Abdallah, K.M., Zakrepina, A.V. & Filatova, I.A. 2020. Research of Specialists' Needs for Digital Educational Tools for the Organization of Education of Students with Disabilities: *Advances in Economics, Business and Management Research*, 138:835-840.
- Abduvali, M. & Guljahon, U. 2019. The use of interactive methods in the process of teaching a foreign language: *Polish Science Journal*, 11:30-33.
- Ahmed, N.A. & Gwamna, M.U. 2020. Integrating information and communication technology in teaching physics beyond Covid-19, *Journal of Educational Assessment and Pedagogical Process*, 1(1).
- Ajayi, L. 2020. Strategies to Mentor Teacher Candidates during CalTPA to Use Research-based Practices to Facilitate Engagement and learning for English Language Learners: *Q2S Enhancing Pedagogy*, 157.
- Aşık, A. & Kuru-Gönen, S.İ. 2020. On-site technology use in language classrooms through the eyes of the pre-service teachers: A qualitative study. *ELT Research Journal*, 9(2): 194-218.
- ATLAS.ti. 2006. ATLAS.ti – The QDA Software. Available at: <http://atlasti.com/>.
- Bacon, E.D., Satienchayakorn, N. & Prakaiborisuth, P. 2021. Integrating Seamless Learning within a Peer-Assisted Learning Center to Develop Student English Academic Writing Skills. *Reflections*, 28(2):147-167.
- Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84(2):191-215.
- Bandura, A. 1997. *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.
- Bayaga, A., Bossé, M.J. & Sevier, J. 2021. University Faculty Opinions of Preservice Teachers' Technological Readiness: *Can. J. Sci. Math. Techn. Educ*, 21:44-64.
- Bless, C., Higson-Smith, C. & Sithole, S.L. 2013. *Fundamentals of social research methods: An African perspective*. Fifth edition. Cape Town: Juta & Co.
- Burke, P.F., Schuck, S., Aubusson, P., Kearney, M. & Frischknecht, B. 2018. Exploring teacher pedagogy, stages of concern and accessibility as determinants of technology adoption: *Technology, Pedagogy and Education*, 27(2):149-163.
- Cheung, P. 2020. Teachers as role models for physical activity: Are preschool children more active when their teachers are active? *European Physical Education Review*, 26(1):101-110.
- Gadachyan, A., Kapitonova, N., Treboukhina, N. & Ustinova, N. 2020. Web environment of distance learning: *E3S Web of Conferences 210*, 18015.
- Gramm, W.R. 2021. Peer mentoring in modern band. *Dissertation*, Boston University.
- Ince-Muslu, B. & Erduran, A. 2021. A Suggestion of a Framework: Conceptualization of the Factors That Affect Technology Integration in Mathematics Education: *International Electronic Journal of Mathematics Education*, 16(1).
- Ismaili, J. 2020. Evaluation of information and communication technology in education programs for middle and high schools: GENIE program as a case study: *Education and Information Technologies*, 25:10.1007/s10639-020-10224-1.
- King, H., Donaldson, G. & Tomlinson, S. 2020. Mentoring for mathematics, in Mentoring teachers in the primary school: A practical guide. Routledge, 1<sup>st</sup> edition. Howells, K., Lawrence, J. & Roden, J.
- Kralj, L. 2021. Handbook of research on teaching with virtual environments and AI. Mentoring Teams as a Model of Supporting Distance Teaching: The Croatian Example, 33.
- Malviya, N., Malviya, S., Saxena, R. & Dhere, M. 2021. Transformation of Teachers to Mentors: Prerequisite of Time is to Excel Innovative Practices in Academics: *Indian Journal of Pharmaceutical Education and Research*, 55(2):373-378.
- McMillan, J.H. & Schumacher, S.J. 2001. *Research in education: A conceptual introduction*. 5<sup>th</sup> edition. New York: Longman.
- Miller, A. 2017. *Mentoring students and young people: A handbook of effective practice*. London: Kogan Page.
- Muir, C., Dörnyei, Z. & Adolphs, S. 2019. Role Models in Language Learning: Results of a Large-Scale International Survey: *Applied Linguistics*, 1-24.
- Muyengwa, B. & Jita, T. 2021. Contexts of work-integrated learning in schools for preservice teachers: Experiences of field placement in Zimbabwe: *International Journal of Work-Integrated Learning*, 22(1):107-119.
- Okoye, K., Hosseini, S., Arrona-Palacios, A. & Escamilla, J. 2021. Impact of Educational Coaching Programs and Mentoring Services on Users' Perception and Preferences: A Qualitative and Quantitative Approach: *IEEE Access*, 9:48105-48120.
- Ormanci, Ü. & Çepni, S. 2020. Views on Interactive E-Book Use in Science Education of Teachers and Students Who Perform E-book Applications: *Turkish Online Journal of Qualitative Inquiry*: 247-279.



- Pamuk, S. 2021. Investigation of Teachers' Reflections on Countrywide Tablet PC and Interactive White Board Initiative in Turkish Schools: *Participatory Educational Research (PER)*, 9(1):22-40.
- Pehar, A. 2019. Interactive whiteboards: *Technics Technologies Education Management Journal of Society for Development of Teaching and Business Processes in New Net Environment in B&H*, 14(2):69-76.
- Sáez-López, J.M., Cózar-Gutiérrez, R., González-Calero, J.A. & Carrasco, C.J.G. 2020. Augmented Reality in Higher Education: An Evaluation Program in Initial Teacher Training: *Education Sciences*, 10(26).
- Schuessler, L. 2020. Teacher Perceptions of Integrating Technology Tools: *Walden Dissertations and Doctoral Studies*. Walden University. Available at: <https://scholarworks.waldenu.edu/dissertations>.
- Shi, Y., Peng, C., Yang, H.O. & Macleod, J. 2018. Examining interactive whiteboard-based instruction on the academic self-efficacy, academic press and achievement of college students: Open learning: *The Journal of Open, Distance and e-Learning*, 33(2):115-130.
- Top, E., Baser, D., Akkus, R., Akayoglu, S. & Gurer, M.D. 2020. Secondary school teachers' preferences in the process of individual technology mentoring: *Computers & Education*.
- Tran, N.H. 2021. Information and Communication Technology application in pre-service teacher education programs in Vietnamese universities: *Psychology and Education*, 58(1): 895-910.
- Tristani, L., Tomasone, J., Fraser-Thomas, J. & Bassett-Gunter, R. 2020. Examining Factors Related to Teachers' Decisions to Adopt Teacher-Training Resources for Inclusive Physical Education: *Canadian Journal of Education*, 43(2):368-396.
- White, C. 2005. *Research: A practical guide*. Pretoria: Ithutuka.